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Part I: The Quality Quandaries

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What's taking so long?**

The Manic Progress of Processors

Relaunching the Mac! An Apple Revival?





+ SMP5MVP3

AA VPD Chipset, 66/100MHz Socket 7 Bus Mainboard

Processor

Intel Pentium MMX, 486 or 386 Celeron/Intel Celeron MMX Multiplier 1.5x to 5.5x CPU clock 30 to 100MHz

Memory

512K L2 Cache
2 DIMM + 2 SIMM sockets support 1MB - 256MB of DRAM EDO and SDRAM

Expansion

1 AGP 3.0 and 3 ISA (3 shared)
IO
2 Serial 1 Parallel 1 Floppy FDD Master and 2 IDE
40MMIO Optional AGP and VGA connectors

Other

Support both AT or ATX Power with APT
Built in BIOS System Management

SMP68X2 +

Intel 486SX Chipset, 100MHz Slot 1 ATX Mainboard

Processor

Intel Celeron Pentium II 333-450MHz CPU
Multiplier 3.0x to 5.5x CPU clock 30 to 100MHz

Memory

2 DIMM sockets support 1 - 367MB SDRAM

Expansion

1 AGP 4.0 and 3 ISA (1 shared)

IO

2 Serial 1 Parallel 1 Floppy 2 USB PS/2 Mouse
and 2 DR JUMPA Optional VGA connector



+ SMP6EX3

Intel 486SX Chipset, 100MHz EAT Mainboard

Processor

Intel Celeron Pentium II 333-450MHz CPU
Multiplier 3.0x to 5.5x CPU clock 30MHz

Memory

2 DIMM sockets support 1 to 367MB SDRAM

Expansion

1 AGP 3.0 and 3 ISA (3 shared)

IO

2 Serial 1 Parallel 1 Floppy FDD Master and 2 IDE
40MMIO Optional USB and VGA connectors

Other

Support both AT or ATX Power with APT



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I read Alan Kotze's article on CPU alternatives, "Workable CPU Alternatives," *ESM* July, page 94) and I agree with most of your views.

However, there is one very important CPU you intend to maintain. The Digital Alpha chip is by far the most advanced CPU in the market place today. Unfortunately, Digital removed us from company and now label every the chips as the chip.

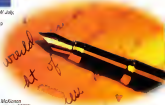
I rarely get the opportunity to tinker with Alpine chips. I don't mind Pentium chips, but the architecture suffers from too many bottlenecks. I know that Microsoft loves the Alpha chip when it comes to running a 64-bit (or 128-bit) version of Windows NT. Who knows? Intel may abandon the Pentium chip in favor of the Alpha in the future.

As for the PowerPC, I will never become a serious contender in the market place. When I think PowerPC, I think Macintosh. When I think Macintosh, I think of stability, price. Just, it's a very fast chip but I think the Mac OS is terrible.

The chance is the future will not be. Entero 33 or PowerPC. (How many people do you know who have been there, there, there?)

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Please write to: The Editor, via email at corrections@nsw.gov.au or fax: (02) 958 590 00.

Quoteable:

"Corporate Canada has taken a pass on Windows 95. They'll wait for NT 5."

— Robert Szwarcman, vice president and general manager of
Sealed Air Canada Information Systems Group

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Perhaps we could have a test in your office. It's here to help you in any way I can. No no and I've here to watch my self I'm not let you know.

This software is important. It speeds up nearly all CPU functions by an order of magnitude. A Pentium 90 can do the work of a Pentium 200. And it's free.

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LG Electronics signs up EMU

LG Electronics Canada Inc. has signed EMU Data Systems Ltd. to distribute its line of CE device optical products and monitors in Canada.

According to a statement from Jim Smith, president of EMU Data Systems, LG is "one of the world's leaders in micro-computers and peripheral technology."

Alan Samra, business development manager of LG Electronics Canada Inc., said "EMU provides a unique technical sales environment which LG feels will contribute strongly to the penetration of LG products in Canada."

LG Electronics Canada products include monitors, portable CD-ROM drives, memory, and hard-disk PCs. Its flagship monitor is the flat Plasma 78T, which reduces vibration.

Hackers make spies nervous about security

PIR — Canadian security agencies have become increasingly alarmed over the prospects of computer hackers breaking into the country's sensitive data banks, says the Canadian Security Intelligence Service (CSIS), Canada's spy agency.

According to documents obtained by the Southern newspaper chain under the Access to Information Act and published recently, CSIS has conducted a series of briefings for several federal departments aimed at sensitizing them to a growing cyber break-in threat.

The Canadian Department of Defense is also reportedly working with the U.S. military to devise measures to keep intruders out of its sensitive military computer sites.

"We take the matter quite seriously and are do- ing everything that we can to ensure we're taking a

good hard look at it," said CSIS spokesperson Martin Whitham.

The Southern article says that since last October CSIS has held briefing sessions for its agencies including National Defence, Immigration, the Supreme Court of Canada, and an association of federal employees with sensitive security clearances.

Concern is growing as intelligence circles feel future conflicts or terrorist attacks could target electronic networks due to growing dependence of governments on computer-based communication and information technologies.

CSIS, responsible for advising the government of potential threats, sees the Internet and other electronic tools as new means for intruders to sabotage vital institutions or steal valuable information. The agency warns that individuals or groups could do extensive damage to power grids, communication and transportation systems as well as stock markets and financial institutions.

"Such attacks could have wide-ranging social, economic and political ramifications," CSIS warns, and adds that the Canadian situation is characterized by a lack of awareness of computer security dangers, as well as the absence of "a formal structure to deal with the issue."

Authorities identify three types of threat: are technology, skilled and able. "The first has intelligence as the ones that are sought by national security agencies," looking material stolen. "The other hacker seems to be able to operate within networks and systems without being detected."

The briefings describe many hackers as young computer techie who enjoy the excitement of entering forbidden territory — a thrill that has lured talented cyber pyromaniacs in jail.



Jim Smith, president of EMU Data Systems

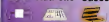
New combo: Sea Change and Peopled form BorderWare

Sea Change Corp. of Minneapolis, Minn., has combined with Peopled plc of the U.K., to create a new company named BorderWare Technologies Inc.

The new company will focus on developing and marketing an enhanced version of the BorderWare Firewall Server. The BorderWare Firewall Server is designed to be a unique combination of firewall (a system for regulating or preventing external access to the network) and an Internet gateway.



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CIPS' I.S.P.s are official!

The Ontario Legislature has passed legislation recognizing International I.S.P. and I.P.A. designations as a self-regulating body in Ontario. The Information Systems Professional of Canada (I.S.P.) and the French equivalent, Informations professionnelles agréées (I.P.A.) is a designation of the Canadian Information Processing Society (CIPS).

Since June, Alberta and New Scotia are provinces in which CIPS' certified members are recognized as self-regulating professionals.

Once certified, members are required to re-certify each year by maintaining a set

level of continuing professional development, and by working at least 50 per cent of their time in a professional field in the information technology field.

These stringent requirements ensure that anyone who holds the I.S.P. designation stays up-to-date in their chosen field of endeavor.

"The I.S.P. designation is about quality. It's like an ISO9000 registration only for an individual," said Bill Sanderson, a member of Ontario's provincial parliament, in a statement.

There are about 2,000 certified I.S.P.s in Canada.

More robust, suitable for LS120 SuperDisk

The Minion LS120 SuperDisk is a 128MB removable disk system which is a direct competitor with the Imago Zip Drive. Unlike the Zip, however, the SuperDisk format is also compatible with the venerable 3.5-inch floppy disks.

A PC with a SuperDisk drive in place of a regular floppy can read and write to both the 128MB LS120 and 1.44MB floppy drive. The SuperDisk drive was a rarity on Canadian store shelves until recently, but since the spring of 1998, Minion has been raising the product's profile in Canada. According to Canadian distributor Simple Technology "Sales of the SuperDisk product are strong and increasing steadily. We're both very pleased with its performance."

The SuperDisk drive is available in several versions, including an external parallel port version, as well as an internal IDE version. A dual Mac/Windows compatible USB (Universal Serial Bus) version was introduced at the recent Macworld exposition. In addition to user aggressive marketing, the SuperDisk product line has benefited from substantial retail price drops, from over \$300 SFP to a less than \$100 standard street price.

Reformatted LS120 diskettes sell at a retail price of about \$18, and can hold the equivalent of about 87 regular 3.5 inch diskettes. ☐



Contact: The Editor

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Please write:

The Editor, Canadian Computer Wholesaler
200 - 50 Adelaide Ave., Toronto, Ontario M5R 1J8
Fax: (416) 593-8534
E-mail: csd@ccw.ca

Editor, News Column
Call: (416) 262-1100
Fax: (416) 262-2400
E-mail: news@ccw.ca

Associate Editor, Test Labs
Call: (416) 593-0474
Fax: (416) 593-8534
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- BIOS with Intel Chipset/BIOS function



EM 7710 AGP SINGLE PENTIUM II

- Intel 486X AGPPort Desktop MB
- Supports Pentium II 333-333 pins CPU or Slot 1
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- BIOS with Intel Chipset/BIOS function
- TCO approved



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- On board Yamaha PM148C 50 Audio Chip
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- Incorporates SuperFLO technology (optional)
- Supports 4-GB with Intel Chipset/BIOS function
- Made in Taiwan



MS 7011S AGP SINGLE PENTIUM II

- Intel 486SX AGPPort Desktop MB
- On board Yamaha PM148C 50 Audio Chip
- Supports up to 100 Mbit/s F-B & Ethernet CPU
- Incorporates SuperFLO technology (optional)
- Supports 4-GB with Intel Chipset/BIOS function
- Supports 4-GB with Intel Chipset/BIOS function
- Made in Taiwan



MS 5677S AGP PENTIUM III (SMD)

- VIA MMX new chip AGPPort, 50 Audio Chip
- Supports 4-GB with Intel Chipset/BIOS function
- Incorporates SuperFLO technology (optional)
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- Supports 4-GB with Intel Chipset/BIOS function
- Supports 4-GB with Intel Chipset/BIOS function
- Made in Taiwan



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INDUSTRY FLASH

Back at ya! Cases ease Lucant

The ongoing litigation war between Lucant Technologies and, seemingly, everybody else in the networking world, was dented up a notch when Lucant was contended by Cisco-Systems Inc. for patent infringement.

Cisco also denied Lucant's charges that Cisco had violated Lucant patents. According to Kevin Katsulis, senior vice president for the service provider line of business for Cisco: "We view Lucant's action as a marketing tactic to slow down industry leaders. Lucant has sold or threatened to sue the majority of data networking players, large and small. We are concerned about the damage this action could have on the industry as a whole."

Buying from the front

The GreenBox Collection of Windows Software (TUCOWS) Interactive Ltd. has added an online software store to supplement its shareware and freeware download service.

It's called a Free (which stands for "Electronic") Buy And Register Now!

This is a partnership between TUCOWS and The Vision Factory designed to allow customers around the globe "to purchase and download their favorite software titles without waiting for shipping approvals or other unnecessary delays."

According to Ross Baker,

director of digital retail services: "This is an extremely exciting time for us. For the first time, the wishes of people that tend not to visit each

month now have a clear and easy way to purchase the products that they download from TUCOWS."

The Vision Factory has designed a product called Corfling, which can allow thousands of different ads to be shown for sale, delivering millions of transactions, and manage the fulfillment of orders. Visit <http://www.buynow.com>



Now, what we've all been waiting for: NetWare 5!

(NR) — Novell Inc. says that its long-awaited NetWare 5 network operating system (NOS) will ship by Sept. 30.

Powered by NetWare Directory Services (NDS) Novell says that version 5 is a "true 64-bit ready platform that combines the maturity and reliability of the traditional NetWare with the speed, reach and open standards of the Internet."

NetWare 5 also includes an enhanced version of NDS, support for the LDAP Internet 3 communications standard, and new directory-related security features.

It also offers Java Virtual Machine (JVM) for running server-based applications and server web browser views. Other new features include a five-year license of the Novell enterprise management software from Decisio Corp. and an integrated Netware ProStack Server.

A Novell server with a five-year license starts for US\$2,399.

Microsoft: Happy days are here again!

(R) Regulate. Child-sterilized Microsoft Inc. says it has more than doubled its second quarter net income for the quarter ended June 30. The company also reported a 29.4 per cent increase in sales and 11.3 percent increase in operating income in a year-over-year basis.

Net income was US\$2.1 million on sales of US\$1.18 billion for the quarter.

Notable strong performance came from three market segments: retail, commercial/education, and Microsoft Spelt Computing Alliance (MSCA) and Devices, and the company.

Intel suit tossed out

(VR) — Intel Corp.'s patent infringement lawsuit against flash memory chip developer Silicon Storage Technology has been dismissed by a U.S. District Court in Delaware. The case was thrown out on grounds regarding jurisdiction; the company said.

A U.S. Federal Court Judge McKenna handed down a ruling stating that chip manufacturer Intel had been unable to establish a claim for the Delaware court to pursue this disagreement that involved the two companies' battle of which one headquartered in the Silicon Valley area of California.

Intel brought the suit against Sunnyvale, Calif.-based Silicon Storage in Delaware because the chipmaker, like many other U.S.-based corporations, was incorporated in that state. Intel said that it had hoped that the case would be brought to trial more quickly in Delaware than it may have been in California.

Intel had charged in its suit that Silicon Storage was infringing on four Intel patents concerning flash memory circuits and memory cell architecture. Silicon Storage replied that its patented single cell technology is patent, designed around a different technology and does not infringe on any of Intel's patents.

Intel says it has not dropped where or when it will re file the case.



Outsourcing pains under scrutiny

(VR) — Outsourcing information technology services may look good in prospect, but a significant number of Fortune 1000 companies have discovered that what appears to work in theory can create real problems.

A survey released by information technology firm Jan Gordon & Dickson PC and their although some 60 per cent of the 100 Fortune 1000 companies responding to the study embrace outsourcing as a primary means of providing some IT functions, 54 per cent reported their outsourcing relationships have gone "surprisingly awry."

"Corporate America may need to reassess the strategies it employs when engaging in outsourcing relationships," Harry D. Weiss, a partner with Gordon & Dickson and "Outsourcing companies prepare for the risk and liabilities associated with working with an outsourcer; they may continue to jeopardize the success of their mission critical IT systems."

Among the problems reported were service level failure, scope disagreement, unexpected costs and dissatisfaction with vendor performance. Weiss said.

But despite these difficulties, the survey found that more than 25 per cent of respondents have renegotiated key parts of their outsourcing relationships and only 15 per cent have made adjustments based on benchmarking.

In addition, just six per cent of the companies said they use contract termination while only one per cent deploy Internet telephony.

And when it comes to dealing with the Millennium Bug, the companies are also behind the curve, the survey found. Although some 50 per cent of the respondents anticipate Y2K conversions to be completed by the year 2000, 48 per cent of the companies surveyed have failed to coordinate their Y2K efforts with the entities with which the corporation has network connections. CR

KDS

What are you
looking at?

VS-9 EDITOR'S CHOICE OVERALL
AUG 1997

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Number One Rated 17" Overall by NSTL

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Scottish Theft will put Counterfeit Software In Channel

By Alan Thwaites

A huge haul of about 115,000 Microsoft Windows 98 manual covers, including Certificates of Authenticity (COAs), will chase counterfeit applications for the computing channel. The theft, which occurred this summer at Thompson Lath Ltd. in East Kilbride, Scotland, was valued at an estimated US\$17 million.

The manual covers were stolen in swapping OEM versions of the Windows 98 operating system. Interestingly, the integrated cover/COA was a strategy by Microsoft to combat software fraud, as counterfeiters would previously remove COAs from inexpensive product to include with higher-priced software, explained Kimberley Lander, anti-piracy manager for Microsoft Canada Co.

She predicts the Scottish activity will impact the Canadian industry. "It's highly probable. There's certainly an active channel that sells counterfeit product."

The risks are high, as people found dealing in illegal software in Canada could face up to a \$1 million fine, or five years in jail, under criminal law.

Both end-users who may purchase the product unwittingly, could find the software doesn't work properly, and they won't have access to Microsoft technical support, says Lander.

But she and analysts can avoid buying counterfeit product. "The easy way is to only buy from the authorized distribution channel."

For end-users, Windows 98 CDs (both the OEM and retail version of Windows 98), sport a hologram that says "Microsoft" and "Genuine" (Lander emphasizes that users should never buy OEM software, unless it's being sold with a PC.) The spine of the Windows 98 retail box includes a heat-sensitive label containing the word "Genuine."

In other news, customs officials in Germany have reportedly seized thousands of illegally copied versions of Microsoft's Office Professional and Standard editions, Windows 95 OEM, Windows NT Workstation OEM and Windows NT Server software. (Some of the illegal materials were tracked back to the Scottish haul.)

In Canada, an estimated 79 per cent of application software is pirated, and 47 per cent of channel piracy is counterfeit software. It's estimated that software theft cost the Canadian economy more than \$425 million in 1997.

According to the Business Software Alliance, software piracy in the U.S. cost the economy 120,000 jobs in 1996, and cost U.S. businesses 18.66 million in fines and legal fees in 1997. By 2005, piracy is expected to account for the loss of 300,000 jobs.

"We know it's tempting for Canadian system builders to buy from the unauthorized channel," says Lander, manager of Microsoft Canada's Anti-Piracy unit. "But they need to recognize that 80 to 90 per cent of the product sold through the unauthorized channel is illegal or counterfeit. Using the unauthorized channel is an extremely risky business."

"It's a real tough battle," says Lander, "because the unauthorized channel markets very aggressively. But resellers need to recognize that they're putting their business at risk by using unauthorized product."

So we're working hard at getting at least three to explain it all, both via direct access resellers and with CAAST (the Canadian Association Against Software Theft). And we're mounting a new strategy to get the message to consumers, through working with elementary schools, high schools, and school boards. We need to get to consumers as early as we can."

Business-survey retailers can be part of the solution, as demonstrated by Russ Hu, president of Ottawa-based Joly Systems. In July, Joly won the first Northern Lights Award from Microsoft Canada for its efforts to combat software piracy. The award, says Mayrovič, is the company's way of recognizing channel partners who demonstrate leadership in the anti-piracy battle.

"Day to day, we see fines from people selling software at prices too good to be true," says Hu. "It's a real concern because it takes away from my market share — like anyone else, I want a fair market share, in which to compete. We all complain about this, but we don't always follow up on our concerns. At Joly, we decided to be quite diligent about it, so we've been feeding information about our concerns to Microsoft. We also take time to explain to our customers, when they use our service clinic, all about the need for licenses on each machine they're using, and that kind of thing. Most of the time, we find there's more ignorance than malicious intent. Most consumers misunderstand the concept of the ownership and use of computer software."

Of course, Microsoft isn't the only player in the anti-piracy game. In fact, most of the computer industry's biggest names are part of CAAST, which positions itself as "an industry alliance of software publishers who share the common goal of reducing software piracy."

"We have a commitment to ensure that people know what's bogus," says Mike Elton, secretary and general counsel for CAAST. "Our message is aimed at everyone — through our anti-piracy hotline, our Web site, and the presentations we do, we focus on the reseller community, small- and medium-sized businesses, and the consumer. It's an effort that needs to be made, because the amount of counterfeit and illegal product coming into Canada is simply unbelievable." ■

Contacts:

CAAST Anti-Piracy Hotline

1-800-383-9790

CAAST Web site:

<http://www.caast.org/>

Microsoft Anti-Piracy Hotline:

1-800-RU-LOST

Microsoft Anti-Piracy Web site:

<http://www.microsoft.com/canada/piracy/>

— with files from CCF staff

Alan Thwaites is a Toronto-based journalist who specializes in high-technology reporting. He can be reached at anomal@proton.com.

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Printer market hits

by Jeff Evans

Over

The summer of 1998 was especially hot for printer companies, as vendors scrambled to out-do one another with new product launches.

Epson Canada Ltd. seems to be offering models of ink-jet printers for every significant niche: from budget home computer users, to photographers, to small and medium business network users, to professional photographers. On Sept. 1, Epson launched three new consumer and business ink-jets, the Epson Stylus Color 440, 640 and 740 models. The newer Epson printers offer near photo-quality output, plus a bundle of software and online services, at very low cost.

Brother Industries Ltd. updated its line with new monochrome and color laser, and monochrome and color multifunction products. Five new Brother HL 1110 series printers were announced on Aug. 3, offering 30 ppm speed, low material costs, reduced power consumption and easy-to-use, paper handling features. NTC Technologies Canada announced a new September 1st 600C ink-jet printer model on Aug. 4, which is a full-color laser quality ink-jet with an estimated street price of \$199, including an extended warranty offer. Lexmark reintroduced its printer line with new monochrome, color laser and ink-jet computers in the spring. On July 8, Okidata announced its broader jet offerings in the color category with the OJ4100, a photo-quality 1,200 by 600 dpi printer.

HP also introduced its September 1st 1040V and 1040DV laser printers, based on steel case or workstation designs. The high-end ProPerformance 1040DV prints 77 ppm, is equipped with a 125MB/s processor, 200MB random memory and a 500MB hard disk. It's priced at \$1,695.

Canon Canada Corp. introduced the photo-market with a company product with Lexmark in the design of the CanoPrint 1020, which is priced at \$199. The printer prints white by 400 dpi, and prints 10 color pages per minute or 1.5 color pages per minute. The 1020 ink cartridge has an SRP of \$33, while the black ink cartridge is \$46.

On June 11, Artec Canada Ltd. pushed the page per minute



drive!

coverage with its new, Marlin line DocuPrint N40, a 40 ppm networked business laser. The company also released its first consumer color ink-jet, the DocuPrint X46C and X46C color through agreement with Lexmark. As well, Xerox introduced a premium 12 ppm laser printer — the Xerox DocuPrint P12, aimed at the serious SOHO and small business user. The DocuPrint P12 has a range of specialty service options including overnight exchange and on-site service, in addition to a standard three-year Xerox warranty.

Where's HP?

Hewlett-Packard Co., the long-time technology leader in both the laser and ink-jet categories, has been uncharacteristically quiet during this period of frantic product introductions by its competitors. According to reports from the U.S., however, HP has not been idle. The company is said to be preparing its largest ever wave of new product releases, beginning in September and October. HP's plans are said to include up to 20 new printer products, covering the spectrum from budget ink-jet to workgroup color laser. An entire new category of extended-life inkjet application is also said to be waiting for public unveiling.

Several significant trends are apparent:

- Laser printer speeds are increasing steadily, outpacing the also rapid increase in ink-jet print speeds. Faster onboard microprocessors and smart software such as Adobe's PrintGear has commonly boosted the speed of entry-level lasers to 8 ppm, and office lasers to between 12 and 40 ppm.
- Users' costs of ownership are being driven down, resulting in a wider potential market. Color lasers are much less expensive (beginning around \$3,000), and much more reliable, resulting in lower service contract and supplies costs. Ink-jet printers are benefiting from improved ink-jet head and ink formulation technology, resulting in greater productivity per cartridge, and less ink deposition on print paper, for better quality output on inexpensive stock. Laser cost per

page is being reduced by features such as the Brother HL-3000 series' ability to consume several toner cartridges before having to replace the drum unit.

- The main profit opportunity for resellers continues to be the after-market supplies, as companies hardware owners realize, while prices on ink and toner products remain high.

The small to medium business market is the hot new focus of several printer vendors' activities, with new products from HP, Xerox, Brother, Okidata and Lexmark specifically targeted at that sector. Many of the printer vendors are betting big bucks developing and marketing products on the supposition that business customers are more willing to pay a little extra for network connectivity features, extended warranty features, name-brand supplies, and complete document system solutions.

Multifunction device unit sales in Canada are expected to grow to about 154,000 units in 1999, and 209,000 units in the year 2000, according to a recent Evans Research Corp. survey. The sometimes misnamed multifunction device category is growing rapidly, with Brother taking about 25 per cent of the 70,000 units in 1997. Healthy shares are also held by Xerox, HP, Canon, Toshiba and Sharp. Xerox announced its latest multifunction device, the WorkCentre Pro 545 on Aug. 11. ■

Contact:

Brother — <http://www.brother.com>

Epson — <http://www.epson.com>

Fujitsu — <http://www.fujitsu.com>

Lexmark — <http://www.lexmark.com>

Okidata — <http://www.okidata.com>

Xerox — <http://www.xerox.com>

Jeff Evans is Associate Editor of Canadian Computer Wholesaler. He can be reached at jeff@pcpost.com.

Computer Associates

makes new channel push

by Rod Lavrenko

Industry heavyweight Computer Associates International Inc. is planning to tap into the fast-passing channel to reach new markets for its traditionally enterprise-oriented technology.

CA is a software giant, with revenues of US\$4.7 billion in fiscal year 1996. The company employs 11,000 people at 160 offices in 43 countries. Until now, CA products, like Unistar TNG, lived and grew in the *Fortune* 500 environment.

Unistar is an enterprise-level solution used to manage IT resources, including intranets/networks, systems, applications and databases. An implementation can cost up to a couple million dollars. (For example, in August '95, Bharat BT, India's leading satellite communication services provider, selected Unistar to manage its help desk with its desktop and server management operations. A few days later, Radstock Canada announced Unistar would be implemented to manage the company's 600 Canadian stores.)

Now CA is in the process of creating a different kind of customer, with a new product and a new channel strategy.

Consider Unistar TNG. It's really a collection of functions and features that will do everything from managing databases, security systems, help desks, compression tools, shipping and receiving, and pretty much everything else that a large network needs. By packaging the individual components as shrink-wrapped products costing a few hundred dollars each, CA is trying to reach new customers.

"Now we can go into areas like help desk, firewall or remote control and have products on their own," says Chris Devlin, assistant vice-president for CA Canada. "This allows people who focus only on those markets...to use technologies that have only been available in Unistar before."

The new product line, called Workgroup Platforms, targets businesses with up to 250 employees, and includes software like ShiftIT, which provides distribution, installation, and updates to software applications, operating systems and files. GuardIT is a firewall solution that controls network access to protect systems. AssetIT is a solution for managing computing assets throughout a networked environment. CypBIT is a data encryption program that safeguards business information against potential intrusion. ServiceIT is a knowledge-based help desk solution.

This doesn't mean businesses can buy the various components and build a Unistar solution from scratch, at a serious discount. However, VARs can integrate specific programs from the CA lineup for customization in their area of specialty. For CA, this is a way to build upon the success of the technologies without entering the Unistar market.

Steve McElife, senior channel analyst for market research firm International Data Corp. (Crislist) Ltd., in Toronto, says, "They are

selling [functionality] from Unistar TNG but repackaging it up. The idea here is to get more providers access to the technology at where, or what they can find."

CA has partnered with Canadian distributors Ingram Micro, Microsoft, TechData and Globetel to accomplish this goal.

Ingram Micro Inc. (Calside)'s group manager of reseller services, Vince Salomon, says Computer Associates' expanded channel effort is a big opportunity. "They're putting a lot of focus into channel training, getting the word out through distribution, through their customers. I think it is a huge initiative."

One of the most interesting areas of opportunity lies in do-with potential revenues in services and training. "Basically, the struggle is not for everybody to get skilled IT professionals," said McElife. The basic product might be just a foot in the door to that services market. (VARs) can then get entry into more accounts and begin to expand their service side."

CA's Devlin and this represents "the single largest growth opportunity in terms of revenue and profit from a single vendor in the next year or two."

CA gets greater brand recognition, increased product sales, upgrades to the full Unistar, increased demand for CA-trained technicians, and of course, increased revenue.

Frank Ts, president of Sytron Systems Inc., a Richmond, B.C.-based value-added systems integrator, thinks it's too early to tell if the products will do well. "It's the customers who actually decide." He sees the new products as potentially positive because they can address not only proprietary legacy machines but, instead machine platforms. "If CA can come in and support NT and Novell that is good, but it is a matter of adoption."

How successful will this venture be? That will tell, say industry analysts.

"It is not always obvious that companies that decide they want to do business with the channel will do it. And it isn't always obvious that such a program will be a profitable enterprise," commented McElife.

But he added, regarding Computer Associates' initiative "It seems to be a very surface consideration, they seem to have done something very real to back up their assertions." ■

"They're putting a lot of focus in terms of training, getting the word out through distribution and through their customers."

— Vince Salomon

Rod Lavrenko is a Vancouver-based journalist. He can be reached at Rod.Lavrenko@bc.cablecom.bc.ca.

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Is CANADA READY FOR A MAC RELAUNCH?



by
Jeff Evans

Now that the Apple iMac computer is shipping to Apple dealers, the stage seems set for a revival of consumer interest in the Macintosh platform.

Will it exceed the excitement over the original launch of the Mac in 1978?

The estimation of Apple founder Steve Jobs' attempt to revive the well-loved Mac personal computer comes just in time for the busy "back to school" and holiday consumer buying seasons. After months of Apple's often striking and innovative "Think Different" ads on TV, radio, in print and on billboards, at least a certain segment of the

Canadian public seems ready to embrace the Mac again. The rebounded low offer for the Apple Mac brand resembles the public acceptance of the "new" Volkswagen Beetle automobile earlier in the year. The question is, will the burst of hype over the iMac translate into a long-term reversal of Apple's slide in market share and gross revenues?

Sold Before They Hit the Shelves?

According to Apple Canada representatives, Apple's dealer channel has taken an unprecedented number of pre-orders for the new iMac computer. This latest Macintosh is aimed squarely at two of Apple's traditional strong market segments: home and education. The third stronghold, the professional graphics market, is served by more traditional desktop Mac models.

The Apple Advantage

The iMac is an "all-in-one" computer, with a monitor built into the same chassis as the computer CPU and other components. The iMac features a very fast PowerPC main processor, a built-in, high-speed modem, ATI graphics chipset, and, interestingly, it has no built-in floppy disk drive. Apple's thinking seems to be that today's modern Mac user will demand a high capacity removable cartridge drive such as an iMacros LS120 SuperDisk, or Iomega Zip.

Apple claims the iMac is perhaps the easiest to use computer on the market today; set-up takes literally only a moment or two, including connecting to the Internet.

To facilitate the attachment of peripherals, the iMac comes with a USB port that can also function as a hub for multiple USB devices. That simple feature instantly creates a significant potential third-party market for the sometimes maligned USB product category. Notably, at the most recent MacWorld computer show, third-party hardware manufacturers such as iMacros announced the imminent availability of USB products compatible with the iMac.

At a time when third-party developer support for the Mac had been sagging, the iMac offers an opportunity for the Mac community to benefit from third-party innovation.

Big Bang for Less Buck

The iMac is innovative in terms departing from a number of outdated Apple tradi-

tions. First, it has third-party technology standardized on its motherboard (such as the ATI graphics microprocessor).

Also, it combines very high performance with a (for Apple) very low price. In the past, Apple tended to sell underfeatured, somewhat crippled and slow models at lower price points, and reserved the fastest performance for high-priced models aimed at the pro graphics market. Apple appears to have learned at least one thing from its disastrous Mac clone licensing fiasco: today's consumer market simply won't buy computers based on slow, obsolete microprocessors. A large part of Apple's near meltdown a couple of years ago was caused by Apple getting stuck with more than US\$3 billion in Macs based on obsolete Motorola 68040 microprocessors.

The Mac clones in 1996 wouldn't even look at the older Motorola processors for their products. Instead, they hunted for the fastest PowerPC chips they could find, to offer an attractive price/performance ratio to the consumer. According to Apple, the basic iMac model offers processing speed as good or better than high-end Pentium II PCs. The iMac is expected to sell for around \$1,999 in Canada, very competitive in terms of price/performance with a name-brand Pentium II-based Windows PC with a color monitor.

The release of the iMac, coming after two profitable quarters for Apple, should give the company some additional momentum. This may be Apple's first major opportunity in many years to attract significant numbers of new customers to the Mac platform.

The company's intent to profitability has until now been based on ruthless cost-cutting, resulting in a leaner and meaner company. The iMac is the first new Apple product with a good prospect for selling to more than the hard-core Mac faithful.

Apple has breathed new life into the computer that made technology seem humane, desirable, and worth believing in.

For Apple's resellers particularly, the iMac couldn't be coming at a better time. ■

Jeff Evans is Canadian Computer Wholesaler's Associate Editor. He can be reached at jeff@ccw.com.

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Coming Slowly: Writing To DVD!



You may find a growing number of your customers will be asking about hardware that allows them to record DVD disks. Who wouldn't be interested in a technology that allows you to store a disk the size of a CD and record multi-gigabytes of data onto it?

Your customers will refer to these devices as rewritable DVD, recordable DVD, DVD-RAM, DVD-R, DVD-RW, DVD+RW and maybe a few other variations — and therein lies your selling minefield. This market hasn't matured to the point where clear product sub-categories exist. And standardization continues to progress slowly: if you looked at the market last year, the picture would have been just about the same. However, there are trends emerging.

The write-once technologies are primarily of interest to people who want to back up or archive multi-gigabytes of data. Most of the interest has been in the area of DVD disks that you can write like a floppy or hard drive. Here, the battle lines have been drawn for more than a year mainly between proponents of DVD+RW (DVD+ReWritable) and DVD-RAM. Among the supporters of DVD+RW are Sony, Hewlett-Packard, Philips Electronics, MCC (Mitsubishi Chemical), Ricoh, and Yamaha. Forming the DVD-RAM camp are Toshiba, Matsushita (Panasonic) and Hitachi.

At its booth during Comdex Canada in July, Panasonic was demonstrating its latest DVD-RAM drive. Based on what I saw, DVD-RAM has emerged as the first-runner. When I saw Panasonic's first-generation DVD-RAM drive a year earlier, the seemingly fatal flaw was that it used a sealed cartridge design preferred after its PD cartridge. PD products weren't exactly rushing off the shelves, and having an advanced design on PD seemed destined to fizzle.

The clear advantage of the other rewritable DVD design was that the media wasn't wrapped in a proprietary case, and could therefore potentially be used by any machine that had a DVD player (potentially because the DVD player specification has to support this). This is analogous to the situation with recordable CDs, where a recorded disk can be plugged into any reasonably new CD-ROM player.

The advantages are cost and ubiquity. CD players are cheap and plentiful. A company would only invest in a few (more expensive) CD recorders, but would be able to distribute disks of data that could be read by any modern multimedia computer equipped with a CD drive. Analysts are predicting that DVD players will soon be as common as CD-ROM players. If this happens, a company would be able to follow the same strategy of investing in only a few DVD recorders, knowing that the DVD player could read the disks on anyone's PC.

Okay, back to the DVD-RAM design's fatal flaw: The cartridge holding the recording media can only be read by a DVD-RAM drive. In order to make the DVD-RAM media more generally accessible, Panasonic's solution was simple — make the player removable. Thus,

Panasonic offers a 2.6GB removable disk cartridge. It looks like other DVD-RAM (or PD) cartridges, but has a hinged door at one end that allows the disk to be removed. Once removed, the disk can be used as a DVD player. The catch is that the player must support the DVD-RAM specification. Panasonic's new 4X DVD-ROM player does, and other next-generation DVD players may as well.

Panasonic said its DVD-RAM drive would be available in August, at a suggested retail price of about \$1,150. The 2.6GB removable media cartridge will sell for about \$40, while the 5.2GB fixed media cartridge will cost \$60.

Another fact that's giving DVD-RAM the current edge is that Creative Labs — with the marketing weight to help push the product into the mainstream — is supporting the specification. Creative has introduced its own second-generation DVD-RAM drive that is selling for US\$599. It is also selling 5.2GB media five-packs for US\$170. Creative says its revised DVD player is coming in September that will read DVD-RAM disks.

For its part, DVD+RW offers larger storage capacity (3GB versus 2.6GB) as its rewritable media. Sony, one of the DVD+RW backers, claims that it will also be cheaper to make DVD-ROM players compatible with DVD+RW than with DVD-RAM disks. Sony was scheduled to introduce a DVD+RW drive during this summer.

In a couple of months, when DVD players that support DVD-RAM disks appear, I'd be willing to recommend the technology. But not without some strong concerns that the ground for rewritable DVD is still shifting. ☐

David Threlka is a Vancouver-based journalist and Editor of The Computer Paper. He can be reached at david@tcp.ca.

"Analysts are predicting that DVD players will soon be as common as CD-ROM players."

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Database vendors are slow to move to object-oriented technology.

by Annette Perlechi

Forget the U.S. PowerBall Lottery, remember when the smart money was on object-relational databases?

Just over a year ago, vendors and pundits alike were touting object database technology, and promises of flexible application systems that adapted rapidly as business needs evolved were plentiful.

Fast forward to the fall of 1998 and instead of a tidal wave, object database technology is more of a trickle.

The universal database or object-relational database management system — eagerly touted by vendors as a key enterprise system that would let organizations mix and match conventional text and numeric information with business objects, components, and varied multimedia data types — hasn't lived up to early expectations. And while overall adoption of object-oriented technologies continues to rise, adoption rates for object-relational databases haven't gotten off to an auspicious start.

Object-Enabled Databases Defined

Object databases store information as objects with built-in links to other pieces of data. They are typically used in real-time applications or systems that involve complex data, such as e-commerce or financial trading. Such applications could also be built using relational databases, which store data in tables that have to be joined together to answer complex queries.

Hybrid object-relational databases blend support for multimedia forms of data and object programming techniques with the flexibility of relational technology. The hybrids still keep all of the data into relational tables, but they can index and search for information based on its objects.

Objects A Tough

Face Sell

Oracle Corp., after years of talking about objects, ended up tacking relatively limited object capabilities onto its Oracle8 software released last June. And for its part, Informix Software Inc. overhyped its Universal Server before the software was really there, giving the whole object-relational concept a black eye as the process Informix's object relational technology originally was a separate database called Universal Server. After a repackaging in November, the object features became the Universal Data Option to Informix's Dynamic Server relational database.

"It's an opposite strategy the database vendors hooked up to, and it ended up being a total failure," says Michael Barnes, an analyst with the Horowitz Group Inc. in Framingham, Mass. "The people who need the functionality to support multiple object and multimedia types are using pure object databases, not the universal hybrids. And that's turned out to be a small market."

Things to Consider when Choosing a Database

Ignoring pitfalls for the moment, why should anyone care which category of database product they are using? According to International Data Corp., here are some key things to consider when choosing a database product:

- Support for object-oriented programming and languages.
- Simplicity of use.
- Simplicity of development.
- Extensibility.
- Complex data relationships.
- Interoperability and integration.
- Performance versus storage.
- Distribution, replication, and federated databases.
- Scalability.
- Product maturity.
- Legacy people, programs, and databases.
- Universality of SQL.
- Software ecosystems, and
- Vendor viability.

Pure object database management systems finally have a vendor highest on their side. Computer Associates International Inc. shipped its long-promised Informix software last December. But pure object databases still make up just a sliver of the overall database business. "It's a teeny-ling market," says Carolyn DeCenzo, director and principal analyst, database and data warehousing worldwide program for Datagroup in San Jose, Calif.

Datagroup projects the worldwide sales of pure object databases will increase from US\$122 million in 1997 to US\$164 million in 1998 while at the same time relational databases that include object-relational hybrids will grow from US\$5.3 billion to US\$6.2 billion.

The Informix database, which CA first officially introduced nearly two years prior to shipping, supports such object capabilities as inheritance, encapsulation and object identity, as well as complex data types and multimedia. Informix can also extract data from legacy relational databases.

Analysts say Informix may have a price pinch, since it does not carry the baggage of the relational database world. Some object-relational databases don't have all the capabilities of objects, but the less-than-metro-metric of Informix Universal Server and Oracle8, however, shows that most developers are simply not ready to put objects in their databases, some analysts argue.

Julie Kaufman, senior research analyst for software research with Toronto-based International Data Corp. (Candle) Ltd., says nothing here is a proven relational model to something new like objects is tough. "It is a paradigm shift to ask users to move from relational to object databases and people are just not ready for it. Informix has suffered largely due to the fact that they pushed the Universal Server concept way before people were ready for it," she said. "Users are still getting their heads around relational database and optimal efficiency and the object-oriented approach forces you to change the way you see things."

For now the outlook for both types of databases remains hazy.

Just Blowing Smoke

Some traditional relational database vendors argue the market for object requirements is not so great and has not developed as rapidly as proponents would have anticipated.

"To some extent this is an example of a solution looking for a problem and that is a wonderful lesson of this industry," says Guido Sirin, president of Sybase Canada Ltd. in Mississauga, Ont. Last year, Sybase released its Adaptive Server based on its Adaptive Component Architecture. The architecture is based on open component logic, development tools and optimized data stores. The multi-tiered framework is designed to manage and deploy components across a distributed computing environment.

"The software industry and the infrastructure industry are locked to the pits with incredibly innovative minds, stressed restless with figuring out clever and new things. They occasionally bump into challenges and when they resolve them they run around saying, 'Here is a solution the world must be waiting for. But that isn't always the case,'" Sirin adds.

Although acknowledging his company was partly to the hype, John Sowler, server marketing manager for Microsoft, Ont.

based Oracle Corp. Canada Inc., says the message that niche or specific applications can best utilize objects such as multimedia data types, has been lost in the claims that objects are the next revolution in database technology.

"A typical organization doesn't have the need for storing, accessing or manipulating multimedia data. It's complex and involves specific applications," he said. But according to Sawler, although still very much a niche market, users will begin to see the benefits of objects especially with the evolution of Web applications.

When Oracle 8.1 becomes available this November, the Internet will play a big part of that release. According to Sawler, included will be Internet features and functionality to extend the database over the Internet, support for Java, and integration with Internet application servers.

"A lot of organizations are extending existing databases and making them accessible through the Web whether through traditional means or application servers," he said.

IBM Canada Ltd. delivered Software technology in DB2 Version 2 on OS/2, Windows NT and Unix platforms in 1995. It is object-relational, with support for image, audio, video and text data types. But according to Harish Harris, director of database technology at IBM's Toronto Lab, IBM didn't type its object-relational extensions and still didn't wouldn't type DB2's object-relational capabilities.

"We early on recognized the need to extend the relational model to include object support. And we did that at the same time we were solving other customer database issues like scalability and ensuring high performance," he said. "When objects are part of a complete product that is appealing to customer — not the only characteristic — users are buying it and trying it but still running their traditional applications."

According to Harris, customers are far more focused on business intelligence and support for e-commerce than objects. That is why IBM continues to focus on the broader aspects of DB2 along with object support.

Show Me the Benefits

Diagenet's DiCenzo says users have been frustrated by the failure on the part of universal database vendors to deliver a sound economic model to justify relational system migrations. No one doubts the technology's advantages, but few have been able to sell its return on investment. As with previous over-hyped technologies, object-relational is a technical success but a marketing failure.

"Object relational is not a high priority in IT today," says Harwitz Group's Barnes. "Embedding technology initiatives used to be seen as

a value-add, even when they didn't have demonstrable bottom-line impact. Today, more companies pass on new technologies until they can clearly understand how they're going to return economic profit. That aspect still isn't clear with universal servers."

Michael McKee, marketing manager database servers

with Microsoft Canada Co.'s Windows platform users, says there is a concerted move toward application-driven rather than database-driven purchases. "Users are really looking more for a business solution — whether that be an ERP (Enterprise Resource Planning) or an accounting system and getting away from technology for technology's sake. And more often than not, the database doesn't take precedence but rather, it is important that the database not get in the way and yet be available enough to handle the customer load," he said.

With Microsoft's SQL Server 7.0 expected to ship later this year, instead of storing objects and multimedia components inside the database, objects are being used to make database applications more flexible. As McKee explains, SQL Server 7.0 is built on OLE DB, a component interface and a natural extension of ODBC, which allows for heterogeneous queries and data access.

"We actually ship the query processing and storage engine in SQL Server 7.0 and the interface between those is OLE DB. So what you can do is a standard SQL query and provide data information from an array of sources," he said.

The result, according to McKee, is that IT shops can build database systems that easily leverage legacy data and are easy to build, extend and manage.

But timing is another reason that object excitement has slumped.

According to Don Jackson, country manager for Informa Software Canada Inc., people on the database administrative side have been overwhelmed with the Year 2000 situation and haven't had the time to invest in learning object-relational technology.

"A lot of IT shops have been focused and consumed by year 2000 and that has become a much more pressing need than the business advantage clearly available to them with a object-relational database," he said.

Those business advantages include "faster, more accurately revealed patterns in a company's data which result in a savings of money, time and effort," according to Jackson.

WORLDWIDE SALES

Object Databases* (US\$ millions)



Relational Database** (US\$ billions)



*Projected
**excludes object relational hybrids
Source: Dataquest



Analysts use Microsoft SQL Server 7.0 database to track what Microsoft calls the world's largest site database. The repository of most photographs and website maps is at <http://www.microsoft.com>.

Relational database makers have themselves also seen better days. Along with the Year 2000 concerns, issues such as market saturation, poor marketing, foreign currency crises, and vertical industry mergers are causing losses in some instances, at Informix, Oracle, and Sybase.

According to Kaufman, IDC Canada figures show that the overall database market in 1997 was expected to have grown 26 per cent over the previous year, but in actuality, it only grew by about 11 per cent. Not surprisingly, the major players seem to disagree on the diagnosis of the database market's health.

Informix, for its part, claims its problems relate to execution and have been corrected with a recently revised marketing plan. "We're not seeing any weakening of the market that some of our competitors have attributed their problems to," Jackson said.

Pure Objects Versus Hybrids

Don LaClair, vice-president of information management marketing with Computer Associates International Inc. claims that unlike its competitors, user acceptance of Java™ is moving the Orlando, N.Y., company well along its five-year goal of turning Java™ into a billion dollar business. "I think the timing is right and we're really at the front of the curve that is getting picked up and is generally accepted."

LaClair claims that traditional relational vendors have resisted the water when it comes to object technology and that user resistance to object-relational databases all comes down to the fundamental terms of the pure-object versus object-relational hybrid approach. "Relational vendors came out with object-relational hybrids and thought that would be sufficient, but this doesn't have even most of the basic concepts of object technology," he said.



Robert Adams from Informix database technology was among the Sybase solutions employed to host the 1998 World Cup Tournament. (Source: <http://www.informix.com>)

"If you really want and believe in objects and if you look at all the development tools people are using today everything is virtually object oriented. Certainly Java is the hottest and most recent case of a pure object development environment. So if you are going to do development with tools like that, then it only makes sense to have a database that can support the same model of objects that your tools are using."

Universal databases were positioned as more flexible than pure object databases, because the universal databases extend existing relational technology, making it easy to port legacy online transaction processing (OLTP) systems to new object-relational platforms. The idea was that strategic data would be accessible to new and existing applications.

According to its proponents, the object-relational hybrids provide the benefits of objects without forcing users to turn away from familiar relational techniques. Oracle's Sander says object-relational hybrids will eventually be the most attractive

object option since they offers users the extension of relational architectures instead of a brand new way of storing data. "Users have made a huge investment in relational databases — not only in the technology but in programming staff and database support — and by having the object-relational approach you allow them to use the same infrastructure rather than replace all the technology."

Pure object databases also represent an increasingly steep learning curve, longer development cycles and potentially costly investments according to Informix's Jackson.

Object Future?

So is there a future for object databases?

While object databases are not in danger of replacing other types on the market just yet, Internet multimedia and the need for blazing-fast data access gives object databases a long-awaited market breakthrough.

"The interest in object databases has always sprung from the shortcomings of relational databases. Useful as relational databases can be, there are a few things that they don't do very well. They don't have sufficient storage to manipulate bulky complicated data such as images, digital audio and video, geospatial information and the like," said Harvard's Barnes.

In years past, that sort of data was relatively rare.

Another important limitation of relational databases lies in their awkwardness in communication with object-oriented applications. Database's DeCenzo predicts: "As Java becomes more popular, I think we'll see that more and more applications are going to be using object systems to hold Java-class libraries and Java objects, as well as Java applications." ■

Antonette Pulvirelli is a Toronto area journalist who specializes in high-technology reporting.

Pros/Cons — Object Versus Relational Databases

Object Databases

- Pros**
 - Storage of objects in the same file as the data
 - There is fast performance to complex applications
- Cons**
 - There is a lack of experience of developers and tools
 - There is a steep learning curve for relational users

Relational Databases

- Pros**
 - Users can add objects without changing base technology
 - There are more mature development and management tools
- Cons**
 - Objects must be forced into relational tables
 - Object-to-relational mapping could hurt throughput

Source: Informix

Product Review

Delphi 4

by John Heinen

is Slick, Fast and Rock Solid

In Ancient Greece, Delphi was home to the greatest oracle of them all. Borland Delphi 4 continues that tradition with client/server tools to communicate with Oracle, Sybase, or just about any database. And the great gods of antiquity would have loved this latest release.

Learning ancient times behind, the modern history of the Delphi product goes back to the mid-'80s, when Borland checked the developer community with the newly perfect Turbo Pascal at the unheard-of price of US\$49.95. It sold millions of copies, and Borland pretty well defined the Pascal programming language. Turbo Pascal eventually evolved into Delphi, Pascal into Object Pascal, and with this fourth version Delphi just keeps getting better.

Delphi 4 is slick, fast and rock solid, and produces code (by Windows standards) that alone is executable files. It is for this reason that Delphi is often the tool of choice for producing the small business utility programs given away by the major computer magazines.

Database Connectivity

Delphi 4 is equally good as a development tool for producing large enterprise-wide custom applications. It comes with a cornucopia of plug-in components that make database connectivity easy to implement while allowing sophisticated database transactions. We reviewed the Professional edition, which supports Access, Paradox, Paradox, dBase and dBase databases either on the desktop or over a local area network.

The client/server edition includes SQL drivers for Oracle, Sybase, Informix, MS SQL, Server, Interbase and DB2. Both Professional and Client/Server editions include excellent data-aware components such as *comms* and *tbl* forms. Also included are pared-down but still very good versions of third-party tools such as the TurboLink SQL Client 4.0, an excellent business graphing control.

We did find that SQL Builder, a tool to visually create SQL queries, should have been included in the Professional edition and not limited to the Client/Server edition. Unless you're an SQL whiz, you'll probably need a tool to generate complex SQL code. Microsoft Access, Fox Pro and Ingres's own Visual dBase provide such tools. We were forced to fiddle Microsoft Access if we were stumped as our SQL. That is inconvenient and doesn't seem like the best marketing strategy.

Apart from the lack of an SQL wizard in the Professional version we were very pleased with the database features. Be warned though, distributing database applications means distributing the Borland Database Engine (BDE), which adds both size and complexity to the installation. Luckily, InstallShield Express is bundled with Delphi 4. The program takes care of the messy details of getting a complicated application ready for distribution and the wizard-like process includes handling setup of the BDE at the user's end.

The Standard edition is not recommended for applications requiring database access, as the database tools are severely limited.

Three Versions

As in the previous three days, Ingres continues to use the three-tier marketing strategy for sales of Delphi 4. The Standard edition, the best-buy, is hard to recommend for anything but learning. This is not to say it is not as slick and solid as the other editions, but it lacks the most advanced features in just about every area and is ultimately frustrating. Nevertheless, Delphi is not inexpensive, and if you have never used Borland before, especially Object Pascal, it may be a good investment

to get your first taste for US\$99.95 and then upgrading to the Professional version for US\$299.95.

The first bet for non-enterprise users is the Professional version for US\$299.95 for new users, but the competitive upgrade is US\$299.95. Delphi 4 Professional will not displace you whenever your programming interests, from database to Web applications to multimedia.

The Client/Server Suite is the top-tier product. At US\$2,199 for the competitive upgrade this is pretty damn expensive. The feature list is rich including 175 pre-built components. This edition has all the necessary tools for large corporate network applications.

System Requirements

Processor: Ingres recommends an Intel 680386 486DX2 processor or higher. For this review we used a 160MHz Pentium and found it to run nicely. While Delphi 4 may run on a 486, it will be sluggish. **Operating System:** Microsoft Windows 95 or Windows NT 4.0 (Service Pack 3) is required.

Memory: Ingres suggests 16MB RAM with 32MB or higher recommended. Our review machine had 64MB RAM. 16MB is a joke — presumably, if you have patience, it will work, but at today's RAM prices, go for at least 32MB.

Other requirements: include 68MB of hard disk space (install), a CD-ROM drive, a VGA or higher resolution monitor, and a mouse.

Delphi 4 Versus Visual Basic

The main competition to Delphi 4 is Microsoft Visual Basic 3.05.0. Both products provide similar Rapid Application Development (RAD) environments and both are designed to meet the needs of utility and application developers. In our opinion, Delphi beats the competition handsily due to its speed, the small size of the creatable files it produces, and its true object-oriented architecture.

On the other hand, Visual Basic, particularly Visual Basic for Applications, resides on almost everyone's desktop as part of the Microsoft Office suite. Microsoft has made it very tempting for veterans and new programmers to leverage the knowledge they pick up along the way rather than try to learn another programming language. Ingres has done a superb job continuing to improve and support Delphi. Delphi 4 is a mature development product with excellent third-party support. There is an active on-line community and dozens of books to aid the beginner and advanced programmers and we have no hesitation in giving Delphi 4 our highest recommendation. **—**

John Heinen is co-owner of Vancouver's *Enterprise DataGraphics*. He can be contacted at heinen@tdc.compucon.ca.

Product

Delphi 4 Professional

Vendor:

Ingres Corp. (Borland International)

Pricing:

US\$299

Comments:

The best bet for non-enterprise programmers, whatever their interests, from database to Web applications to multimedia.

Rating: A-



Delphi 4 forms built with Ingres build your own Web browser.



This sample client-server application accesses data of Delphi 4's entry database.



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What does it really mean to be an 'integrator'? Is there a role for smaller resellers?

"If you're not creating value, you're out of business."

—David Botterill

by Paul Weinberg

More than three years ago, David Botterill, owner of Northwest Digital in Calgary, saw the writing on the wall in the computer industry and decided to turn his strictly PC hardware outlet into a provider of systems integration.

The change was not something he would accomplish overnight for his 35-person operation. It meant doing other things, hiring more professional staff with new skill sets, such as project management. "If you're not creating value, you're out of business,"

he says.

It should not be a surprise. Some resellers are taking a critical look at what they are doing. Bruce Stuart, president of the Vancouver-based ChannelCorp Management Consultants Inc., lists the current failings in the PC-selling business. He said hardware companies are becoming slimmer all the time, as processor prices drop about one per cent every two or three weeks. Resellers used to receive price protection as an insurance policy against a fall in value in the consumer market for already purchased systems. But various PC manufacturers have stopped offering this and its place have established build-to-order and channel assembly programs — which

are supposed to eliminate excess systems (cluttering the channels. [The jury is out on that score.]

In Vancouver, three PC retailers — Douglas, Byte Computer and Advantage Computer — have recently closed their doors. “The hardware margins were the water that kept the garden lush. But when you turn off the water, the garden goes dead,” said Stuart.

He predicts there will be fewer computer retail superstores in PC sales tend in the same direction as consumer electronics and refrigerator business. “We are looking at a situation where a third to a half of the PCs are going to be sub-\$1,000 by the end of the decade.”

Stuart is not sure the answer lies in all retailers switching to systems integration, since most of those businesses are either too small or lack sufficient technical and financial resources to accomplish that type of contract. He suggests they focus instead on what is possible and still lucrative — services, support, training and consulting. “Take a look at the integration that EDS does, versus the integration that a 10-man VAR can do. They are not in the same league.”

However, most systems integration actually entails is open to interpretation. Some vendors call themselves “integrators” in order to differentiate themselves from their competitors.

Markham, Ont.-based graphics and manufacturer, ACT Technologies Inc., uses the terms “systems integrator” and “ODM” interchangeably in its channel strategy terminology.

And the well-known “system integrator” SHL Systemhouse actually derives half of its Canadian revenues from reseller activity.

Market research firm International Data Corp. states categorically that systems integration comprises of the planning, design, and implementation and project management of a technology solution. It is more than just constructing a network solution. Usually, the integrator has agreed to do a contract at either a fixed price or with a specific definition of how the work will be delivered onsite. Included also are systems specifications and measured performance levels. Such projects often costed \$250,000.

A few vendors, such as IBM Canada Ltd. are attempting “with difficulty” to crack the market of mid-sized companies with more affordable enterprise resource planning solutions, according to Len Genuerov, research manager for services at Toronto-based International Data Corp. (Canada) Ltd. He adds that in terms of marketing, SI providers “are positioning themselves as business consultants rather than information consultants.”

Confirming this switch in approach is Ray Buckton, director of marketing for the Vancouver-based Burnt Sand Solutions Inc., which has undergone a complete makeover from reseller to integrator/professional services company. CEO Jim Yuma was formerly the president of the ComputerLand retail chain, later taken over by Systemhouse.

Buckton said: “If we were up to explain what we do in one word, in one sentence, we certainly wouldn’t say we were a technology company. In fact, we’re a solutions provider, in the truest sense of the

word. We focus as much on the business process and business rules that the organization has in place, as we do the technology.”

He suggests this reflects how the PC vendors are more focused on meeting the strategic goals of corporate clients, and associated with just providing products with new features and functionality. While Burnt Sand still does derive revenue from licensed software sales, this is becoming a less significant part of its business. “What we do is bring in more of the specialized software — customer management software, project collaboration software.”

Burnt Sand is becoming less of a VAR — which Buckton defines as the company primarily focused on developing an effective solution for a vertical market like accounting, says Buckton. “They [resellers] are hoping the accountants will buy it. They are not worried about whether the accounting firms are set up to effectively use it.”

The company also differentiates itself from the large consulting houses, like Andersen Consulting, which have developed their own integration units or the large SIs like Systemhouse. At Burnt Sand, he continues, there is greater emphasis on turning out these solutions quickly. “Companies can’t live with the 18- to 24-month development cycles. You need to spin out a solution in a few months. Less than six months is the absolute max.”

The large consulting firms, Buckton finds, are like law firms, which prefer to bill by the hour. This is a completely different approach from most systems integrators, which operate on a fixed time, fixed price basis. “We are going to do this solution for \$50,000 [for example] and that’s it all there is to it. It doesn’t matter if it takes us a week or (more). That’s our goal. That’s nice from a customer perspective. They are not worried about having a team of 30 consultants on their premises for six months running up big bills.”

Burnt Sand, a largely technical company of 100 employees, is an example of a middle-sized integrator beating the large consulting houses and winning contracts with large corporate clients like the Globe and Mail, Petro-Canada and Bay Networks. But there are only so many opportunities in this kind of market in Canada.

Winnipeg-based VAR Computer Koros concentrates almost exclusively on what it calls the “mid-market” — organizations with 25 to 500 employees regularly using desktop PCs. Pat Koros, the vice-president of sales for its eastern region, reports that systems integration is the fastest growing portion of the company’s business. “We don’t want to be only a fulfilling reseller because that takes you out of the strategic end of your customer’s business — which is tying it altogether and driving the business results through the integration.”

He states that demand for integration has always existed in the mid-market. But its requirements are different from large corporate clients. “Our target market generally does not have the large IT departments needed to deploy the high-end integration. We are very much an extension of their organizations.”

But not all clients want integration services, Koros points out. “In many cases, the customer doesn’t request or want the integration of these products and applications.” □

Paul Whiberg is a Toronto-based journalist who specializes in high-technology reporting. He can be reached at paulwhib@comcast.net.



Jim Yuma
is CEO of Burnt Sand Solutions Inc.
The company is now a specialized technical
services company.

“We are looking at a situation where a third to a half of the PCs are going to be sub-\$1,000 by the end of the decade.”

—Ray Stuart

The Well-Balanced PC

What's the perfect mix between power and price? Which components will make for happy users?

home computer user. In addition to new games that have a lot of stored data, the drive also provides the user with the ability to play DVD movies right on the computer.

Granted, it's still not up to the quality of a full-fledged DVD unit for a home theater system, but it offers more opportunities potential for the PC user. When coupled with the drop in RAM and video card prices, the allows even midrange systems to do more than ever before in terms of multimedia performance.

It's the Software!

Another nice way to add value to a system is with pre-installed software. An inexpensive system stepped down to the hardware and the operating system can seem like a really good deal up until the user tries to do something with it. After all, there's only so many times one can play *Microsoft Office* before it gets boring. Bundling software in a computer package can be an attractive deal to some consumers. Well-chosen pieces of software not only make the system more attractive as an overall value, it also makes the computer function right out of the box.

The most popular direction for pre-installed software would still appear to be office applications suites (usually including a word processor, spreadsheet and database) or home financial software (such as accounting or tax programs). Though some may be intimidated by the price of packaged suites, a hand-dipped version can be very attractive, and the price isn't so much as home.

On computer adding, a package of general entertainment and educational software, whether in the form of games for the kids, reference guides (encyclopedias, movie guides and atlases) or special interest products (astronomy cookbooks or astronomical programs, for example), "home theater" software for use with a DVD drive is also a nice touch.

The Systems

With overall system value in mind, this month we asked readers to supply a system containing a Pentium 4 chip (either 266MHz or 3.0GHz), with a retail price between \$2,000 and \$2,500.

This month's systems were tested using *BAPCO's SystemB2 benchmarking software*, at a resolution of 1,024 by 768 with 16-bit color depth.

Editors' Note:

In this column, a lot of new things happen, a few times. After writing the initial column, I've encountered a value drop on the right. We had found a 3,000MHz system going for the best, but by press time, a lower chip would actually be available for the price range (with a required increase in system performance). In the interest of fairness to all of the participants this month, we kept the 3,000MHz system in place. However, readers may find that the final list of value prices and quality better reflects the state of the system.

An Ideal Combination

The newest, fastest, most powerful computer will always find a home with real power users. Meanwhile, the lowest-price system, regardless of its age, does, will always be attractive to really cost-conscious buyers.

But, somewhere between these two extremes lies a middle ground worth looking at: the well-balanced computer.

DVD: It's Not Just for Your TV

The personal computer is coming into its own as a home entertainment center.

One component picking up steam is the DVD drive. Still a bit too expensive for the entry-level systems, DVD is now affordable enough to drop into a midrange system without adding too much to the price. The addition of the DVD drive not only increases the storage potential on each of the data disks, it also opens up a new world of multimedia for the

Centronic AllOpen

Price: \$2,195 street



Pros: The 13 GB hard drive offers plenty of room for software and storage.

Although CD-RW media is still a bit expensive, the inclusion of the CD-RW in this system (and a compliantly blank disk) is still handy, and it can be used with regular (and now inexpensive) CD-R media for write-only copies.

The system comes with a big software bundle from Microsoft, including Excite 98, Grammar 99, Gold, Money, Works, and 3D Mouse Maker. Also included is Norton Anti-Virus.

Cons: The inclusion of the CD-RW instead of a DVD limits multimedia. However, this is a very minor complaint.

The AllOpen system is a well-rounded system with most of the goodies tucked away inside the machine. With a CD-RW as the main CD drive in this system, a large hard drive, and a big software bundle included, there's a lot about the AllOpen machine to like.

AllOpen systems are generally not overly flashy, but they certainly offer a lot. With a really spacious hard drive, and a CD-RW onboard, this system could be a very valuable for the customer who deals with a lot of data and needs to make copies (or, for the user who is interested in making their own music compilations). The software included with the system also makes a good look to the rest of the family.

Empac Azure

Price: \$2,190 street

Pros: With 128MB RAM, the 100MHz Celeron motherboard and 8MB video memory, this system is fast.

The sound card used is Creative Labs' new SoundBlaster AWE64 Gold, for high-quality input and output. Creative's PC Works multimedia speakers (from subsidiary Cambridge Soundworks) are also included.

Cons: There is very little in the way of software on the machine beyond the operating system and configuration programs for the components.



Again, while not an overly flashy system, the Azure system sent us to Empac has a few nice features up its sleeve that make it worth considering.

Coming in with a really good benchmarking score, and with lots of room to expand, the Azure may be a great pick for fans of power. The lack of bundled software or obvious "cool" components like a DVD or CD-writer may turn some people away. On the other hand, the sound components included in the system are top-notch, and the Celeron motherboard answers compatibility with future CPUs and other components that can benefit from the higher bus speed. Tinkers may love this one.

Compaq Presario 5007

Price: \$2,399 SVP

Pros: The 5007 is a great overall package, with an eye-catching design sure to get customers interested in the machine's other features. USB and joystick ports appear right in the front of the computer, which allows for easy connection of scanners, digital cameras, and other peripheral devices. (Reaching around the back of the machine to connect things can be annoying.) This is one of the first machines to feature the Digital Flat Port for flat-panel displays. Normally, hooking a flat-panel display up to a computer involves converting the video signal to analogue (that is the job of the display adapter), and then converting it back to a digital signal on the flat panel. This new type of port is a direct digital signal between the computer and the display, with no signal loss from the conversion process.

Cons: There's not a lot of video RAM with this machine, so higher display resolutions may not be well supported.

The smaller amount of video RAM brings overall system performance down somewhat. The performance difference may not necessarily be a big concern for the general user, but speed freaks will be put off. The one-year parts and labor warranty period is fairly short.



Compaq's system is the most unique-looking system in this month's round-up, with rounded edges and a slightly slung-back look. A lot of attention was paid to design with this computer, from the recessed CD-ROM (defined in panel with a thin "hole") a second device, if one is installed later, to the swiveling flap below that reveals joystick and USB ports right on the front of the machine. It's not the flashiest machine in the bunch. Still, the Compaq Presario 5007 is a machine

that has a lot of nice features, most notably the forward-looking digital video port, eye-catching design as certainly a conversation piece that could go a long way to making this sale.

Touch

Price: \$1,999 street

Pros: The 8 GB hard drive is spacious. A U.S. Robotics 56Kbps modem, 6MB video card, a 3D sound card and Yamaha multimedia speakers come included with the system. Lotus Smart Suite is included.



Cons: The product seems a bit plain compared to systems with DVD and other nifty toys. Still, the price makes up for that.

At \$1,999, the Supercenter-distributed Touch system comes in at the very low end of our price range, but comes with some nice components. While it's not packed with the nifty toys that come in spite of the other systems this month, the

Touch system still comes with a good selection of components, including the larger hard drive, a fast CD-ROM drive, multimedia speakers, and the Lotus Smart Suite package. Reasonably put, the system is a great choice at a lower price.

IBM Aptiva E86

Price: \$2,499 SVP

Pros: The IBM name is one of the best in the industry. The DVD drive offers greater capacity than a CD-ROM drive, and also doubles as a DVD video playback device, with reasonably good quality software-decoded MPEG video. 64MB RAM and an 8GB hard drive are good numbers for this system. Lotus SmartSuite is included.

Cons: The price is on the higher side. One year is one of the shorter warranty periods in this roundup.

Although IBM often seems more concerned with building good overall machines than with speed, the Aptiva E86 manages to keep its eye on both considerations, and offers up a great balance. While the performance is slower than some of the other systems tested this month, the Aptiva checks in as a good solid machine, with a lot of great components and dependability. While a bit more expensive, it is still a great overall machine, with IBM's good name backing it up.



STD CompusPartner

Price: \$2,199 street

Pros: Boasting 128MB RAM, and a SoundBlaster AWT8 video card with 6MB onboard, the system offers great performance. The DVD drive offers higher capacity than a standard CD-ROM, and the built-in MPEG decoder offers exceptional DVD video playback. An LS-120 drive is included instead of the standard floppy, offering removable 120MB disks for archival purposes, while still maintaining backward-compatibility with standard floppies. The street price is great, considering the components included (such as a U.S. Robotics 56Kbps modem).

Cons: There is no software included with the system.

We always look forward to STD systems, as they are filled with well-chosen components. This month is no exception. The CompusPartner features great components, teamed up with nifty performance, adding up to a great overall machine at a great price. For people who plan to provide their own software, the system could very well be the keeper.



Ultron

Price: \$2,699 street

Pros: The Ultron machine provided the fastest performance of the systems tested this month.

The machine provides excellent value for the performance.

The user has the choice of either the LS-120 drive or a Zip drive and standard floppy for the price quoted. Also, the system we tested included the LS-120 drive, the system performance with the Zip drive may vary slightly.

The 64 chipset allows for faster bus speed and the performance advantages associated with that chipset.

Cons: Not much is offered in the way of software, although a basic home office version is included.

When it comes to speed, Ultron is generally right on top of it. With 128MB RAM and the 64 chipset on the motherboard, this system certainly performs. While also lacking a bit at first, the Ultron system delivers its performance. It doesn't have DVD, like some of the other machines, and has only a very basic software bundle, but the components included are high quality. Many users will appreciate the 64 board and the faster bus speed. With the price as low as this, and with a number of slots free, this machine is a great foundation for those who want to upgrade later.



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Advance Interface Express Micro

Price: \$2,340 street

Pros: The system comes with a Panasonic DVD drive and hardware MPEG decoder, for increased storage capacity and for high-quality playback of DVD video.

The standard floppy drive is replaced with the LS-100 drive, which increases retrievable storage capacity while still remaining compatible with old-style floppy disks.

The Matrox G200 video card, SoundBlaster A1000 and the US Robotics 56Kbps modem are all top-notch components.

Lotus SmartSuite 97 is included.

The system comes with an outstanding warranty (five years labor, three years parts).

Cons: The 5.1GB hard drive is a bit smaller than the drives on some of the month's other systems.

Just shy of being the fastest machine of the bunch, the Express Micro machine also offers up an outstanding system value, with a great collection of components and more.

Overall, this system is a tough one to beat, with great performance, good DVD video results, a LS-100 drive, and nice internal components. With a warranty for five years labor, and three years parts, this is an outstanding system with something for everyone.



Hewlett-Packard Elite 8337

Price: \$3,126 SRP

Pros: HP's experience, three-year warranty and good name back the machine.

The case offers a lot of room for expansion down the road.

Cons: The slower processor, smaller amount of RAM, and only 2MB of video memory are not only less than in the other machines tested this month, the system performance suffers overall. A boost in system RAM and video memory could help shape a far better machine.

No modem is included with this system. Internet addicts will have to pay a bit extra or provide their own.

The 4GB hard drive seems a bit small, although many users may find it to be more than enough.

At \$3,126 suggested retail, the Elite isn't exactly a bargain, especially considering the components included.

The Elite 8337 is Hewlett-Packard's entry into this month's contest. While it's a well-built machine with good components, it leaves a bit to be desired in some areas.

Compared to some of the other machines tested this month, the Elite 8337 seems a bit under-powered, especially when you take the pricing into consideration. To be fair though, it's a pretty good machine, and would be an even better one with a bit of extra RAM. In addition, there are a lot of slots on the board for future expansion.



Editors' Choice



Overall

Express Micro

It's really hard to beat the Express Micro system this month. While not the fastest machine overall, it was a close second, and manages to fit in a lot of great components (with great-quality DVD playback). What's even better is it manages to stay right in the middle of the pricing range set out for this month. This is a great overall machine for the family.



Value

Ultimet

The Ultimet was the fastest machine in the test. While it doesn't have the DVD drive that made some of the other machines look so attractive overall, it offers the choice between a LS-120 drive or a Zip drive (with standard floppy). Ultimet hits the rest of the machine up with quality components, for just over \$2,000. This is definitely a great basic system. **Get**



Given Computers is COW's Best Buy Editor. He can be reached at sawd@topos.com.

The Speed and Power of Motherboards from DFI

**NEW
BX
SERIES**

Intel® 440BX



P2XBL

- Intel® 440BX supports both **440BX** and **440BX-2** Pentium® III processors
- Supports Intel Pentium® III processor up to **400MHz** and future frequency
- UDMA (optional)
- **MSL Certified**
- Intel VeriFusion Lab verified
- PC 97 ready



3D Graphics Video Card w/Intel740 Chipset AGP 7400

- Full reference design for enhanced performance
- 64-bit memory interface
- Full hardware setup for 1.2K triangles/sec
- Color alpha blending for transparent effects
- Supports sub-pixel MIPMAP, TV out (optional)
- 64B and 128B memory supports DMF mode
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Intel® 440BX Ultra 2 SCSI on board Dual SCSI Channel



P2XBL/S

- Supports Intel® Pentium® III processor up to **400 MHz** and future frequency
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- Adapter® AAC-7090 Ultra 2 SCSI bridge on board
- Dual SCSI channels support Ultra 2 SCSI and Ultra wide SCSI
- Targets SOHO, home & personal Web server markets

Intel® 440BX Dual Processor



P2XBL/D

- Supports Intel® Pentium® III processor up to **400 MHz** and future frequency
- **Dual Processor architecture** with Intel® 440BX chipset
- Targets CAD/CAM, desktop publishing and server markets



3D Graphics Video Card Trident 9750 Chip AGP 9710

- Supports DMF mode
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The Well-Balanced PC

LAB TEST



Processor

Cache

Refreshment

RAM

System BIOS

Operating system

Graphics

Sound

Optical drive

Keypad

Video port

Other ports

Local hard

Modem

Interface

Setup

BIOS downloads

Desktop printing

Desktop storage

Desktop power

Other power

Speedtest

Interface

Remote ID

Cost

Accessories

Price

Warranty (if of years; later, years)

Compaq
Presario 552

Processor 1.20GHz

1.5GB

Compaq

64MB

Compaq

Windows XP edition (Home)

ATI Radeon

8.0GB hard drive

24x

Standard

ATI Radeon 7 Pro

24x

Agilent 620

80GB 7.8

Microphone 600MHz

Gateway

Optical for power/voice port

24x

40x

24x

24x

24x

24x

24x

1.00 40 400

www.compaq.com

\$200 (AT)

1/1

Compaq
Regio

Processor 1.20GHz

1.5GB

Asus A6L

64MB

Asus

Windows XP

ATI Radeon

Seagate 8.0GB 4000

Asus CD 24x

Standard

Intel ExpressCore 4000

24x

Agilent 620/620

Asus 7.8GB/80GB Plus

800MHz (Asus) 600MHz

Webcam, Microphone, 300MHz, 600MHz

Compaq 100MHz (Asus) 600MHz

200MHz (Asus) 600MHz

24x

40x

24x

24x

24x

24x

24x

1.00 40 400

www.compaq.com

\$200 (Asus)

1/1

HP
Elite

Processor 1.20GHz

1.5GB

Asus P5000

128 MB

Asus

Windows XP

ATI Radeon

Seagate 8.0GB 4000

Compaq CD 24x

Standard

ATI Radeon 7 Pro

24x

Agilent 620/620 (Asus)

800MHz (Asus) 600MHz

Webcam, Microphone, 300MHz, 600MHz

Compaq 100MHz (Asus) 600MHz

200MHz (Asus) 600MHz

200MHz (Asus) 600MHz

24x

40x

24x

24x

24x

24x

24x

1.00 40 400

www.hp.com

\$200 (Asus)

1/1

Advanced Interface
Express 1000

Processor 1.20GHz

1.5GB

Asus P5000

128MB

Asus

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ATI Radeon

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Standard

ATI Radeon 7 Pro

24x

Agilent 620/620 (Asus)

800MHz (Asus) 600MHz

Webcam, Microphone, 300MHz, 600MHz

Compaq 100MHz (Asus) 600MHz

200MHz (Asus) 600MHz

200MHz (Asus) 600MHz

24x

40x

24x

24x

24x

24x

24x

1.00 40 400

www.lenovo.com

\$200 (Asus)

1/1



Olivetti

In this feature, to be continued next issue, we'll examine both Socket 7 and Slot 1 motherboards designed for 100MHz+ bus speeds, testing performance and reliability with an eye on those features that can help PC builders ship a trouble-free product.

MOTHERBOARDS

Speeds and feeds are important, but a quality motherboard is crucial.

By Christine Bennett

A growing number of consumers — infused with the collected wisdom of experts and would-be experts from the global Internet — are becoming aware of the dangers of buying from smaller shops offering "bargain" prices. Perceived risks include the possibility of getting a reworked CPU and/or a fake cache. Widely circulated reports detail horror stories about how unscrupulous chip-manufacturers sometimes put new lettering (often very convincingly) on a slower CPU and sell it as a genuine Pentium II 300. Fake cache components stick a plastic chip inside a system and hope for the best. So, how can customers be sure they are getting the real thing?

Of course, you could simply sell a boxed CPU (as opposed to an OEM-supplied processor) as the safest assurance. But who wants to pay extra?

There are some other ways to assure customers of the authenticity of your components. For cache verification, use a program called *cacheid* up, available at The Fake Cache Page (<http://didi.com/can/can/fake.html>). Be sure to run it on the machine from a command prompt (not a DOS window).

There are ways of telling a genuine P580 from a reworked processor. The P580 has ECC on its Level 2 cache. Lesser chips don't. (Intel sells ECC and Non-ECC versions of the Pentium II 233 and Pentium II-266.) A real Pentium II-300 also works at 66MHz bus speed. You can check for ECC on Level 2 cache using a program from Germany's CP magazines called *cpidm6.exe* (for *Intel* only). This program will identify a fake Pentium II-300 because it has no ECC on the Level 2 cache. (Do we need to mention that this on-chip memory is not the same as the ECC writing you may find listed on your system's BIOS? Unless it specifies an ECC option for Level 2 cache, the BIOS reference in your BIOS does only with your system RAM.) *Cpidm6* will also notice if you are running on a non-standard bus speed.

Intel also has a program called *CPUID* (<http://developement.com/developement/professional/pcuindex.htm>), but it doesn't check for ECC memory. It will, however, provide the ID of your CPU, which is helpful in detecting the processor type.

Overclocking

While we don't recommend it, a growing number of users benefit from overclocking their CPUs. Some PC hot-rodders run with a 4.5x multiplier and 66MHz bus speed, while others run at 4.0 by 75MHz (or, if living dangerously, at 4.5 by 75MHz or beyond) to get an extra performance boost out of graphics cards and hard drives. Now the latest generation of boards pushes the 100MHz bus as high as 133MHz.

For those who want Socket 7 compatibility, we'll also look at a range of "Super 7" boards, in conjunction with the impressive AMD K5-2, and, in some cases, non-Intel chipsets like the attractive VIA Apollo.



Mega-SRAM 64Kx16



Opti-Atta Plus



Cirrus Logic



Acer 600 Pro

However, Intel has changed its manufacturing process to deliberately discourage chip overclocking (an exciting conspiracy theorists may think of a few other reasons, too). Now, Pentium II's are "multiplier-protected." How can you tell whether a Pentium II can be overclocked? Look at the manufacturing date. Intel started disabling the multipliers on Pentium II chips around the 34th week of '93. Until then, all the Klamath-series chips supported 2.5x through 4.5x multipliers.

Now that Pentium II's are no longer the overclocker's friend, a "Super 7"-based board and CPU best take advantage of the price and performance of Intel competitors such as AMD, Cyrix or IDT. Indeed, AMD's latest K-3 is a very popular choice with value-conscious users and performance buffs. Be sure to get a board that reliably supports overclocked frequencies. See <http://www.comhardware.com> for a number of recommendations.

Local chips aren't always the best choice. An Intel TX chipset, for example, is capable of caching more than 64MB RAM. For comparison, the Sx5991 chipset used in many non-Intel Socket 7 boards caches up to 25MB RAM and supports added features of Cyrix and AMD CPUs.

It's also worth mentioning that even a "premium" Pentium II-300 is often unable to attain a stable 4 x 33. As users in newsgroups such as *alt.comp.pcpentium* mentioned what and why, you need, report, a board that runs fine at 4 x 33, may even be slower at 4 x 33 — provided that they can find time between crashes to run the benchmarks. Desperate users resort to tacking memory settings, to their slower settings to get over accelerated systems up and running. Our advice is: don't push too hard. Reliability often goes downhill above 33MHz on a 66MHz system has pushed past 75MHz.

Also, note that, at 300MHz or more, a Pentium II — real or not — generates a lot of heat. In a hot room, a Pentium II-300 system can become unstable and even shut down or fail because of overheating. Some hot coliders are extra fans. Our advice is to skip the 300 stability and get a 333MHz Pentium II instead. It runs much cooler.

AMD's K6-300 also runs cooler than Intel's 300MHz chip. One case fan and one fan CPU fan is enough to run a K6-300. For users who have excessive noise, this is a bonus. Few users will notice any system performance difference between an Intel Pentium II-300 and an AMD K6-300.

Buying or Building a PC?

Whether your customers are buying a pre-built PC, upgrading an existing one or building their own computer from scratch, the details of the board they choose is the most critical decision they'll have to make. System integrators, too, can benefit greatly from a trouble-free basis on which to build their systems.

Socket 7 and Slot 1 Mainboards

DFI Inc. (<http://www.dfinc.com>) sent us its P50V3+, P2XBL-8, and P2XBL-D boards. Look for a test report next month. A page of Frequently Asked Questions at <http://www.dfinc.com/dfincweb/supportfaq.asp> provides useful information on jumper settings, troubleshooting information and definitions for the dizzying array of acronyms that the ever-changing world of high tech forces us to keep up with.

Although Y2K issues are not listed on DFI's site, the company says all its currently shipping motherboards are Year-2000 compliant.

Chaintech (<http://www.chaintech.com.tw/>) has a number of motherboard offerings that fare well in price/performance comparisons. Its CT-68TM was rated the price/performance champion in the July '98 issue of Germany's PC Magazine, and a first tier out of 24 BX boards rated in the July/August edition of Netherlands-based *Computer/Board* magazine. The company's CT-68TS model adds onboard UltraWide SCSI functionality and, if that's not enough, there's the soon-to-be-released CT-68DU with dual Slot 1 CPU sockets and Ultra2 SCSI, for a whopping 80MB/sec data transfer rate.

We are testing three Chaintech products: CT-68TS, a 100MHz Pentium III + LW SCSI, CT-3 AGM2, a 100MHz Super Socket 7 board for AMD K6-2 (JDH 300 and Cyrix MII-300), and the Desperado Tornado IT900, an Intel i740-based ACP value card.

We were delighted to see the company's BIOS update page on its Web site. It's one of the first to offer an update that adds display adapter screen performance references for Windows 95. The BIOS update for its 68TMI M10X boards adds a feature that enables a user to choose the boot up display sequence of preferred display adapter when both an ACP and PCI display adapter are plugged in the system. This is a must-have feature we think every manufacturer will — or should — soon offer.

The 68TMI (and soon the 68TTS) can be overclocked to a maximum core/clock operating frequency of 132MHz, with selectable CPU bus speeds: 66/66/75/83/100/103/112/133MHz, and selectable multipliers up to 3.5.

And, for building systems based on the still-popular LX chipset,

Chaintech's LX-based 68TM board is a good choice. It was awarded the Gold Award for performance in the June 1998 issue of UK-based *PC Format* magazine.

Transcend (<http://www.transcend.com.tw/Mainboard/index.htm>) offers the TS-ARX, TS-ALX and TS-AEX products, which are BX, LX and EX-based boards, respectively. The product page, at <http://www.transcend.com.tw/Mainboard/index.htm>, has details.

We are testing the company's TS-ARX02 (BX Mainboard), with five PCI and two ISA slots. Notating at about US\$166, it also offers 5M-Lock and CPU monitoring features.

Quebec-based O.H.I. Technologies (416) 808-8600 is the company's Canadian distributor.

Twil Corp. (<http://www.twil.com.tw/>) is preparing to release updated versions of its BD100 (Slot 1) BX and 3A100 (Socket 7) motherboards in late August. Until then, the local BD100 is firing well in reviews around the world. The BD100 motherboard beat other 14 competitors to capture the Editor's Choice award in the May 13, 1998, issue of *DIGSV*, a Japanese magazine, while *Circuit's ComputerWorld* gushed "We love it."

A review of the dual CPU DBS model with onboard SCSI at *Time's Hardware* was a little less enthusiastic, noting its average performance and issues when attempting to use an ISA Plug and Play network card. That review also notes compatibility problems with Toshiba PC100 SDRAM, although Corsair PC100 SDRAM and Samsung PC166 SDRAM both worked well. Nevertheless, the review commends the BD100's compatibility and provides workarounds to some minor issues.

The Taiwanese company's BIOS update page has FAQs, on-line user manuals, test reports and BIOS updates to help dieters and users avoid problems.

QDI Computer (Canada) Inc. (<http://www.qdi.ca/>) sent us three of its systemically called "Diamond" and "Brilliant" series of boards. The Legend-QDI Diamond II is an EX-based board (whichever for CE115), the 3170 Brilliant II is a BX-based board, while the big kahuna of the series is the Brilliant IV, which costs \$249. It's a beauty, with onboard Intel 8259A 1010MHz LAN controller, Adaptec AIC-7860/7860B SCSI controller (equivalent to an AHA-2940UW PCI SCSI controller), providing one 68-pin Ultra-wide SCSI controller and One 20-pin Ultra SCSI connector), an onboard RAIDport connector, level-one Monitoring Systems support, software power down under Windows 95 and support for dual Pentium III CPUs. The system's Award BIOS supports ALS-120 (floppy and Zip-100 drive), as well as the ability to boot from IDE CD-ROM or SCSI.

And why don't more systems automatically turn the fan off when the system enters Suspend mode, like this board does? Its BIOS even provides the ability for system vendors to install their own logic so that the graphics automatically appears at boot time. In short, this is one kick-ass board. (The company cautions that it should only be used in systems with a power supply rated at 250W or higher.)

The company, which has received numerous awards in the recent past, also sells Legend-QDI motherboard products running the gamut of available chips, with LX, VX and TX models available. Like a growing number of motherboard vendors, QDI also offers its own video cards. Its Vision-1 AGP 3D Graphics Card is a 3D accelerator based on the Rendition V2200 chipset. It provides optional video output, MPEG2 acceleration and support for Windows 95 (OSR2.1), Windows NT4.0, Diamond3, DSE Warp, and Windows 3.1x. OpenGL support is provided, too — a bonus for 3D and game buffs.

Also available is the Amazing-1 AGP 3D Graphics Card, based on the Intel i740. This card delivers MPEG-2 acceleration in hardware providing high quality software DVD video playback, albeit with quite an impact on CPU utilization.

BIOS and driver updates for Legend QDI boards are available at the company's BIOS & Drivers page. There is a two-year warranty on QDI motherboards.

The company also has a very informative "Let's Talk" page describing SDRAM, Ultra DMA, RAIDPort, (optional) thermal monitoring, and other features of its products. It's a service we'd like to see more technology vendors offer.

ADOpen (<http://www.open.com.tw/>), is the computer component division of the 87 billion Acer Group, manufactures a far more than just motherboards, but the company's motherboards are highly regarded.

The AX88 (currently listed on the AOpen product page as a Pentium-class board) is a popular ATX model with Slot 1 overclocking, and can be pushed to a ridiculous system bus speed of 133 MHz. Anandtech, in its "BX Motherboard Comparison, AnandTech Awards," calls it "the best of the best" (Anandtech named ABIT's BX6 a close second).

The June 1998 issue of PC Magazine (The Czech Republic) criticized about the AX88's support of new 510MHz and 400MHz Intel CPUs and 100MHz SDRAM (DIMM x 4), saying, "The results are better than anything we have ever seen."

With AGP four PCI slots and three ISA slots, this system will appeal to those for whom the two ISA slots in some competing boards isn't enough. And with voltage selectable from the system BIOS, and the rock-solid stability that has earned it so much praise, it's no wonder this AOpen board is so popular.

The company's Web site has more info on the AX88.

Anandtech also named the AOpen AN39 Pro as one of the two best overall ATX Super 7 motherboards, despite only having two ISA slots. The TMC T55YG is was its other pick. This board uses the VIA VT83C598-AT / VT83C598B (MVP3) chipset and supports DIMM x 3 or SDRAM x 2.

Lucky Star Technology (<http://www.lucky-star.com.tw/>), the 23th largest corporation in Taiwan, has a number of interesting products. Of particular interest to price-sensitive buyers will be its Super 7 Mainboard 5MVP3 (with VIA MVP3 chipset), in the Baby AT form factor. This can provide an easy upgrade for those who want to keep an existing Baby AT case, yet take advantage of an AGP, USB and the Super 7 design of this board. Because of the issues related to different power supplies and placement of components on the newer ATX form boards (most notably, the improved placement of the CPU, allowing more full-length expansion boards), we suspect many users will be attracted to Lucky Star's similarly featured model "3AMVP3" in the ATX form factor. With new ATX cases as inexpensive as they are, there isn't much advantage in keeping an existing Baby AT case.

Of course, the company offers Slot 1 solutions as well. Its 6AMXIV is a new model that utilizes Intel's BX chipset and an AMD BIOS. The company says a new version of the 6AMXIV with onboard IDE-1394 (FireWire) will be available in Q4 '98.

The 6AMXIV is basically a BX version of the 6ALX2 model that was PC Magazine's Slot 1 Editors' Choice award in April 1998. PC Magazine (Australia) cited "the sheer performance of the Lucky Star motherboard that makes it the winner." A chain of comparative Motherboard performance shows exactly how it fared against its competition. The chart also serves as a powerful reminder of how much faster the Slot 1 CPU architecture now is—in general, than that of the best Socket 7 systems.

Lucky Star offers a two-year warranty, including one-to-one replacement during the first six months. The company's Web site has BIOS updates, manuals, drivers and Q&A support sections. We were particularly impressed by the company's Q&A section, which products owners in PC design and provides a road map that can help system inter-

grators put together the pieces that we think customers will be asking for during Q4 '98.

Sabtek Computer Inc. (<http://www.sabtek.com.tw/>) is another Taiwanese motherboard manufacturer. The company's SL-67II is a ATX form factor board based on the BX chipset with support for SBA Link, optional thermal monitoring and dip-switch setting of CPU speed from 60 to 80, and BIOS support for 567560/300130/133330MHz Front DIMM sockets, one AGP three PCI and two ISA slots are provided, along with the usual complement of ports and I/O options. The systems are an Award BIOS and a VTR compliant.

The SL-62A, a low PCI33 ISA slot model without the SBAlink is also available as is a dual CPU design known as the SL-68A and, of course, a host of other models for various CPUs and chipsets.

The company's site provides BIOS updates, online manuals and a page of answers to common problems.

Shuttle Inc. (<http://www.shuttle.com/>) gives us BX hopes on a board known as the Spacewinner HOT-661.

This motherboard, says the company, is the latest Pentium II-based AGP-ready motherboard at 133MHz. The design features: the Intel 440BX chip-set (FSB adjustable from 66MHz to 133MHz), BIOS settings on FSB and Multiplier (Hyperpicks), and AGP capability.

DataExpert Corp. is yet another Taiwanese motherboard, VGA card and multimedia add-on card manufacturer. DataExpert isn't exactly one of the big names, but it's no slouch either. The company says it ships in excess of 100,000 motherboards and 100,000 peripheral cards per month. The current flagship is an MBX8440 board, based on the Intel 83440BX chipset.

It's a pity that the company's U.S. Web site (<http://www.dataexpert.com/>) hasn't been updated since 1996.

Gigabyte (<http://www.gigabyte.com.tw/>) is another well-known name in the motherboard world, with a number of awards to show for its products. The GA-680BX is an 100MHz flagship — and, by many accounts, one of the fastest BX boards on the market. In addition to raw speed, it supports a number of features many customers are asking for — fan speed during suspend mode, 50 Lank connector for use the latest Creative Labs PCI sound cards, health status auto-diagnosis and report, and the ability to boot from HD, LS-120, Zip or CD-ROM. Ultra DMA/33 Bus Master IDE drives (from Triones and Intel) improve hard drive performance considerably over systems without UDMA optimized drivers. A recent BIOS update addresses some early issues with the boards, such as their inability to use a second hard on IRQ 19.

Meanwhile the company's GA-586MX board is popular with Socket 7 fans and is approved by AMD for use with its 250MHz and 300MHz K5-1 processors. An AMD CPU FAQ at <http://www.gigabyte.com.tw/faq/amdcpu.html> provides details, and the company's Web site has many useful links to BIOS updates, manuals, jumper settings, troubleshooting tips and other FAQs.

Micro-Star International Ltd. (<http://www.msi.com.tw/>) ranked the number six PC motherboard manufacturer in the world by the American Publication *Computer Reseller News*, despite not making the top 10 list at <http://www.motherboards.org>. At any rate, its

Can you tell the difference?

What is the difference between a genuine Pentium III® and an over-clocked 200MHz CPU? Not much — if you're lucky. Intel's manufacturing processes, according to most experts here and there, are tight enough that even if you get a Pentium PIII chip using the L2S-memory manufacturing process you see this difference from their higher-cost cousins. In other words, a good board, such as the 680, can run as a Pentium III 200 at 200MHz using a Pentium III core. — If the CPU slows it, it's fast, a pentium-III 200 is somewhat faster than a real Pentium III-200 on a 680MHz bus due to the higher L2M speed from the over-clocked cache. 100MHz bus speed.

Maximor MS-6119 board is characterized as "fast and reliable" by Tom Pabst at *http://www.motherboards.com*. He rated it second overall in his BX board recommendations list, noting that it was the fastest motherboard tested — edging past boards from Asus, Supermicro and Tytan. It's also a very attractive motherboard in terms of price point.

The MS-6119 supports SB-Link, fan off during sleep, and provides optional thermal monitoring.

The company's latest board, the MS-6132, is a Pentium II motherboard based on the Intel 440BX AGPset, incorporating on-board AGP (Accelerated Graphics Port) and a PC98-compliant 3D audio controller in a Micro ATX form factor.

The MS-6132 features MSI's proprietary TOP (Thermal Overheat Protection) and PC Alert technologies. In addition, MSI's SoftCooler software complements the motherboard's conventional cooling fan to reduce CPU temperature without the need for additional cooling devices. SoftCooler reduces the CPU temperature by 30 per cent in just one minute and can reduce the CPU temperature to 80° within five minutes.

The MS-6132 motherboard provides four memory banks using two 168-pin unbuffered DIMM sockets permitting memory configurations up to 256MB of EDO/SDRAM. The on-board IDE controller provides IDE HDD/CD-ROM with PIO, Bus Master and Ultra DMA/33 modes. Up to four IDE devices may be connected.

The MS-6132 provides full AGP performance in a fully integrated solution. The on-board ATI Rage II-based VGA runs on an AGP bus with 2MB (optional 4MB) of SGRAM. The ATI Rage II includes 3D acceleration for advanced graphics, mathematics, and gaming applications. The on-board PC-98 compliant audio controller is based on the Yamaha YMF740 and provides 3D audio effects and digital sound hardware acceleration.

The I/O includes a 16550 Fax UART-compatible serial port, SPSP/PPS/BCP parallel port, optional fast IrDA, and a 1.44MB/1.44MB/2.88MB floppy disk controller and two integrated USB ports. Modem and LAN Wake-up are standard.

The motherboard BIOS is fully Plug and Play, detecting peripheral devices and expansion cards automatically. The flash BIOS and drives are updatable through the World Wide Web. The Plug and Play BIOS includes support for LS-120 and ZIP drives and permits booting from CD-ROM and SCSI hard disk.

ABIT (*http://www.abit.com.tw*) is well-known for its motherboards. The company's BX66 board did not fare especially well in compatibility tests at *http://www.motherboards.com*, but that's not necessarily the case. In some instances, it's that it is a lot better than its LNX predecessor was. The BX66 lacks a connector for SB-Link and features a potentially dangerous "CPU Self-Memo" feature that can, with the wrong settings, kill a CPU by supplying it with the wrong voltages. On the other hand, the ability to set the CPU and bus frequencies in the system BIOS is a very handy feature for overclockers who want to drop their system down to sane speeds for recording CDs or other mission-critical tasks.

ABIT also offers this feature on its AX3 and AB-TX3 Socket 7 boards. A review at *http://www.motherboards.com/reviews/ab3.html* details some difficulties with the AX3's Bus Master drivers but characterizes the material as "gross."

The company offers a one-year warranty on the product.

Further discussion of the BX66 and other ABIT products can be found in the ABIT newsgroup at *comp.sys.ibm.pc.hardware.abit*.

Useful Links:

http://www.motherboards.org/

http://www2.comcast.net/comcastboard.html

http://www.gd.com/tech/motherboards.htm

http://ftp.calgary.abn.ca/motherboards/PC-builder-GB16.html

http://ftp.calgary.abn.ca/motherboards/specs

In our test notes, we'll have reports on many of these boards, along with benchmark tests and information on the newest products from other popular manufacturers, including Asus (pronounced "ah-SOOS," in case you were wondering). We will be testing the P5A, the latest Socket 7 board from Asus, as well as its popular P2B series of boards. ■

Graeme Bennett is Editorial Director of Canada Computer Paper Inc. He can be reached at *grbennet@tq.ca*.

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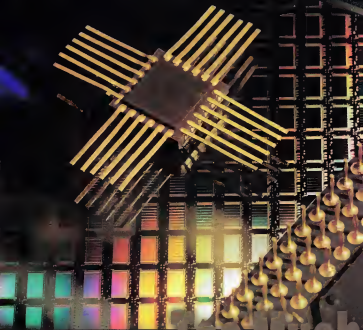
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MICROPRO

by Jeff Elman



Too Much

PROCESSORS:

Intel got into the microprocessor business more than 25 years ago, with an integrated circuit that could process software commands. On the strength of that technological milestone, Intel has become one of the most powerful and profitable companies on Earth. PCs based on Intel microprocessors are the standard in the global computer market.

One of Intel's senior executives, Gordon Moore, coined "Moore's Law" — the rule of thumb that predicts constant research and development will allow microprocessor speeds to double about every 18 to 24 months, while costs remain the same or decline. More than any other single factor in the computer age, the truth behind Moore's Law — that the price-performance of microprocessors would improve personal computer power exponentially — has allowed the personal computer industry to grow and flourish. Ever faster microprocessors from Intel and other chipmakers have allowed hardware and software developers such as Microsoft, Apple, Adobe (and Nintendo!) to create ever more demanding and sophisticated applications for ever faster and cheaper computer systems. Yet, after an astonishingly good quarter century, there are fears that the golden age of Intel is, if not over, at least threatened.

But some experts predict the costs of creating new generations of chips will increase to multi-billion dollar levels. At the same time, many business and home computer users have indicated they will resist paying higher prices for new microprocessors in favor of slower, cheaper ones. What does the microprocessor market in 1999 hold in terms of opportunities and challenges for Intel?

The Need for Speed

The microprocessors that were standard in MS-DOS and Apple PCs in the early 1980s ran at clock speeds around 7MHz to 10MHz, and could perform around one million calculations per second. Current Intel-compatible and PowerPC processors commonly run at 500MHz (500 million calculations per second) or more. Yet, for demanding applications such as video, voice recognition, 3D and 3D graphics, and audio processing, even the best and greatest Intel processors with iCPU chip is a far cry from the PC's capabilities today. For most PCs, this extra horsepower comes in the form of special add-on microprocessors, such as graphics chips and audio Digital Signal Processor (DSP) chips. Add-on media chips can boost multimedia performance

of A Good Thing?

Is the G3 PowerPC 'twice as fast'?

Well, maybe.



by

Alan Zimmerman

You've probably seen the ads on TV with the snark "twice" along with latest Pentium II processors strapped to their backs. These ads, and others from Apple Computer Inc., all end with the same claim — that the G3 PowerPC CPU in Apple's Macintosh computers is up to twice as powerful as a comparable Pentium II processor.

At the Spring launch of Apple's G3 PowerBook, notebook, and iMac home computer, Apple's more-on-line chairman Steve Jobs made the same boast and showed off a couple of demonstrations aimed at proving the point. He let a 266MHz G3 machine go up against both 266MHz and 400MHz Pentium II hardware, running incomplete Adobe Photoshop screens, then running a Macromedia Director animation.

In each case, the Macintosh handily outperformed even the 400MHz Pentium II computer, leading evidence to Jobs' claims that a G3 PowerPC is the equivalent of a Pentium II running at twice the clock speed.

Is a G3-powered machine actually "up to twice as powerful"? There's no doubt about it. From the beginning, the PowerPC originally designed by IBM and built by Motorola, is a powerful CPU. It uses a RISC design that is in many ways more efficient than the 80486 design that Intel has steadily evolved since the 1970s. And the G3 (the third Generation PPC was the first one designed specifically for Apple hardware). At the same time, Apple's operating system has steadily become more "PowerPC Native." The result is a processor and operating system that are, in a large sense, designed for each other.

Doing advanced 3D graphics calculations, and drawing only five watts of power, the G3 runs cool enough that it doesn't need a fan. It features 64KB of Level 1 cache built into the CPU, and 16KB of Level 2 cache — in both cases, twice the amount of a Pentium II. G3 mother boards run at 133MHz, faster than the 60MHz of all but the latest generation of Pentium II (and faster than any current PC laptop).

The result is a hardware design that is suggested in the Apple ads and, of course, verified — at least in some applications. Much depends, however, on the application chosen for the demonstration, and in some cases, on the specific functions chosen within the same application.

And that's what makes it hard to make comparisons that hold up in real life. Apple made much of benchmarking carried out by the *Byte* magazine — trying to know it on the CPUs. In the ByteMark integer processor tests suggested that indeed, a 200MHz PPC and a 400MHz Pentium II scored in the same range. Hence the Apple ads.

But CPUs are only one part of a computer system. In real computers, performance depends on CPU power (except one for Apple), but also on the amount of cache (more another for Apple), and on system bus speed (either Apple or Intel cores, depending on model used). Also consider hard drive and video performance, plus the operating system

(continuing operating systems like Linux or the BeOS can provide some pretty impressive domes on otherwise run-of-the-mill hardware). Think about the software being used as well. Microsoft Office 4.2, for example, was well-known as an inefficient slowpoke on the Mac, while its replacement, Office 98, includes "quick-loading code" that is a generation in advance of Office 93 for PCs.

So when comparing actual applications on actual computer systems, it's not always easy to know how to interpret results.

PC Magazine (June '97) compared a 250MHz Apple G3 notebook with a 300MHz Pentium II desktop. A number of functions were tested (in Adobe Photoshop 4.0.1: Rotate, Gaussian Blur, Unsharp Mask, Lighting Effects, and Rotate, on a 10MB TIFF graphic). The testers spent some time, optimizing memory settings on the Mac (Windows 95 handles that automatically). Their results: "The G3 was slightly faster than the PC on Rotate and Lighting Effects but marginally slower on Gaussian Blur, Unsharp Mask and Rotate."

But when Word and Excel were used as the tests for text, the G3 took, on average, almost twice as long.

Some might respond that *PC Magazine* is obviously biased in favor of PCs — but similar results were reported by *Mac Addict* magazine. In the April 1998 issue — the magazine seemed almost embarrassed to report that on some Photoshop functions, the PC outperformed the G3 Mac.

Similarly, database tests are almost all much faster on PCs. Not because of hardware, but because the big database software companies have almost entirely ignored the Mac, optimizing their offerings for PCs.

Perhaps this isn't really the point. While ads showing CPUs on small-scale test setups, for most users, hardware has far outstripped typical software. G3 desktop and notebook machines are well-engineered computers running a solid operating system with a good range of applications. But while G3 ByteMark benchmark scores outstrip those achieved by similar speed Pentium II, a G3 Macintosh is not "twice as fast" as a Pentium II PC (and Apple's ads carefully do not claim that it is). ■

Alan Zimmerman is a computer journalist and writer living in Menlo Park. He can be reached at alan@home.com.



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"Well, we decided with NT 5.0 that state migration had to happen just as a feature of the operating system."

NT 5.0:

What is Gates' strategy?

by Greg Whitcomb

Just when you'd recovered from the launch of one new Microsoft operating system upgrade — Windows 98 — another looms around the corner. Although Windows NT 5.0 will not be out until sometime later this year (or perhaps early next year, if the U.S. Department of Justice case against the company causes Microsoft to redesign it), dealers, resellers and VARs need to start thinking about NT 5.0 now.

Windows NT 5.0 promises to improve reliability, fault tolerance, network management and administration capabilities. With these new features in place, resellers will be able to create a whole different range of applications and solutions.

To get the details of these new features, we went straight to the top. Microsoft CEO and co-founder Bill Gates has been quite vocal about what he expects to offer in Windows NT 5.0 and has hosted a number of demonstrations of the operating system in recent keynote speeches about Microsoft's plans for the future.

Gates has talked a lot about the Internet integration in both Windows 98 and Windows NT 5.0, support for standards such as ATM (Asynchronous Transfer Mode) and efforts to build in better communications quality of service. Microsoft has also worked with networking hardware giant Cisco Systems Inc. to implement a technology it calls "Active Directory." It is supposed to make sure that if Cisco's communications equipment needs to verify who a user is or what the "system policies" are for that user, the Cisco equipment can link up to the Windows NT "active" direc-

ties to find it.

In short, it is all about making Windows NT both simpler and more powerful. "In 1997, our top priority became the focus on simplicity, part of which is cost of ownership — about half of everything we've done in NT 5.0 comes out of that key focus," explained Gates in a speech at the recent Windows Hardware Engineering Conference (WinHEC). "It's something that I think will stay a top priority for a long time to come, because there are many, many aspects to it."

He says that two other key features in Windows NT 5.0 will be its "scalability" and manageability. "Now, scalability — we have come a long ways. The days when people thought of the PC as a low-end device, those days are gone," said Gates. "In fact, if you look at sales last year of Unix workstations versus PC workstations, you can see a huge divergence. Unix workstation sales were down last year, whereas PC workstation sales went up over 80 per cent."

He admits, however, that Windows NT 5.0 will not meet every design challenge Microsoft faces with an "industrial strength"

operating system for use in corporations. "At the server level, there's still quite a bit to be done," concedes the Microsoft chief. "We got our clustering support out last year. That gives people a two-mode fail-over capability, but we need to crank that up to allow even broader clustering capability for very high performance."

He further suggests that a combination of higher chip speeds, more chips per server — and clustering of those components together along with software improvements — will lead to distinct performance and capability gains.

"And not only will the PC not be viewed as the low end, it will come to be viewed as the high end, and that's where the focus of development for all new applications will come," he says. "Now, NT 3.0 is a big milestone for us in every one of the initiatives I talked about. One of the breakthroughs here is in this idea of state migration. Your state as a user has been very difficult to migrate. If you think to yourself, 'Geez, I'd like to move from one PC to another,' you have to think, 'Well, where is my list of favorite Web sites? What is my list of spelling dictionary words? Where are all the files that I created?' And getting that over to the other PC would require a lot of work, even an understanding of each system's unique changes in the registry and everything that goes on there."

As a result, this idea of "state migration" will be a key feature of Windows NT 3.0. "Well, we decided with NT 3.0 that state migration had to happen just as a feature of the operating system," explains Gates. "It would lead to a lot of benefits — being able to roam, being able to go home and use your home PC and get it all up to size — and eliminating the need to ever have to come to your individual PC to administer that state. It would all be stored centrally and subject to whatever policies that administrators want to set."

He says the real trick with Windows NT 3.0 is that Microsoft is attempting to do all of this without it being "a step backward" by simply moving everything back to the core of the system. "If you do that, then you give up everything that's been good about the PC — the responsiveness, the peripherals, the portability," he says. "In fact, that is the approach that was proposed by the — let's call them the anti-PC crowd — which would have required rewriting all the applications, and that was the so-called NC (Network Computer) movement, or, as we like to say, the non-compatible movement."

So he says that moving everything to the server would be a huge tradeoff against things that PC users expect. "So our approach, which we call IntelliMirror, gives you the best of both worlds," he adds. "I give you the state down on the local disk, so that it's always there for performance, but it also logically stores it at the center, and so we give up nothing to get those benefits of working centrally."

IntelliMirror does this by intelligently "mirroring" the data and applications on the desktop on the server — meaning that you can access the server copy of your data if you happen to log onto another PC (such as a notebook PC or someone else's desktop) connected to the network.

Even with all these great new features, Microsoft's biggest problem in selling Windows NT 3.0 is going to be all the other versions of Windows.

Some users may get confused about the relationship between Windows 95, Windows NT 3.0 and even Windows CE 3.0, so Gates has taken care to make clear the reason for each operating system's existence. "We're very enthused about Windows 95. In fact, Windows 95 is probably the simplest upgrade that we've ever provided, in terms of not requiring more system resources, and bringing a lot of key benefits based on what people have asked for over the last several years," he explained. "That is we do the next major

round, we are going to start with the NT technology, and so we'll need to build a form of NT that's aiming at the consumer market. We're still working out exactly what that will mean in terms of the features set there, but having one kernel, the NT kernel, be at the center of all our activities. It's pretty important to do."

Meanwhile, Windows CE 3.0 is starting to branch out beyond just handheld computers. "Windows CE was one of the new form factors. In the past these form factors (and) operating systems that have no relationship to Windows," he says. "We think by having the same kind of API, the same kind of driver structure, we can have some sharing there. And so for the next several years, Windows has three tiers: Windows CE, Windows 95, and Windows NT 3.0."

Overall, however, Microsoft would rather than corporations and business users move to Windows NT. "Now, Microsoft is sending a pretty strong message to business customers that if they've got the money to run NT 3.0, they've better off to plan for that, and we do think we'll see the market on the business side shift to NT 3.0," Gates concluded. "There were a lot of high-end consumer could shift to NT 3.0, but it's the next major revision that will get down to a flavor of NT aimed at consumers and a flavor of NT aimed at business." ■

Greg Winkler is a Vancouver-based journalist who specializes in high-tech reporting. He can be reached at greg@shawcast.net



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Transcender:

Excellent Preparation for Microsoft Certification

by Stephen Barak

For Microsoft certification exam preparation, nothing else comes close to Transcender's quality, accuracy, and content. If you are a consultant or reseller continuously doing web re-certification, this has to be part of your certification preparation process.

According to Yury Sabatov, a Microsoft Certified Systems Engineer working as an NT administrator: "Make sure that you have something from Microsoft—and some kind of test simulation." Transcender's exams were an integral part of Sabatov's preparation and the resulting high scores on his Microsoft certification test.

Microsoft's exams were precisely simulated in their content and matched Transcender's published exam objectives. In addition, Transcender's error rating and accuracy was significantly better than its competing products.

Transcender software comes bundled with a disk and certification handbook/driver's manual. Installation is a simple as inserting the floppy and running the Setup program. When you run the software, you generally have a choice of attempting from one to three exams that simulate Microsoft's exams. By default, you have 90 minutes to complete the test, although that's adjustable. The exam format is comfortable, and there are several options to choose from.

After completing the test, results are given immediately, with a section by section breakdown — just like in the real certification tests. For example, the NT Workstation "Examination Score Report" screen provides the following information:

Name: Systems Engineer

Date: September 16/1998

Topic: Windows NT Workstation Exam A

Pending Score	92/100	Raw Score	1000/1000	Grade Pass
1 Planning		3/3	100%	
2 Installation and Configuration		18/18	100%	
3 Managing Resources		11/11	100%	
4 Connectivity		9/9	100%	
5 Planning Applications		2/2	100%	
6 Monitoring and Optimization		9/9	100%	
7 Troubleshooting		9/9	100%	

Transcender's pending score is about 85 points higher than Microsoft's. If you can pass Transcender's exams upon first try, the probability is high that you can pass Microsoft's exams. In fact, Transcender offers a money-back guarantee if a customer fails Microsoft's exams.

On the "Examination Score Report" screen, users have the option to print a report, save responses, and view answers. Transcender really shines in its answer screens. Not only do they have a thorough explanation of the correct choice, but also references with chapter and page numbers are provided for additional information. The explanations are superb in their clarity and accuracy. They are an excellent review source of exam topic areas and are

often better than most self-study books.

The supplied handbook provides an excellent overview of Microsoft's certification with correct information, and important phone numbers. The screen on the exam registration process is thorough and concise. There are lots of resources for exam preparation tips on taking the exams and an extensive list of exam objectives, which are neatly sorted and detailed from those posted on the Microsoft Web site. The TCP/IP handbook included a superb supplement on "IP Addressing" by Jonathan Ely, with additional exam tips.

To make the most out of Transcender's materials, study the topic area thoroughly first using Transcender's exam objectives, and then take the test. When looking at the test answers, research all the supplied references and the options that were not correct. If you follow this process, you will find Transcender's exams straightforward.

Consider downloading the demo from Transcender's Web site. It's well worth the investment in time.

In conversation with John Rose, president of Transcender Corp.

CCW: What's the goal of your company?

Rose: Our corporate mission is to provide premier quality educational and training products and services for the information technology industry. Transcender remains a closely held, privately owned business. As the need for training products grows, we are constantly looking for ways to take advantage of the business opportunities these demands present. I think it would be safe to assume that Transcender will eventually seek new sources of capital to take advantage of these opportunities.

CCW: How would you define Transcender's support policy and how did it evolve?

Rose: Transcender's policy is to provide timely, knowledgeable support for our products. While we aren't able to satisfy every customer all of the time, we are constantly re-evaluating how to satisfy our customers and meet their needs. We have made significant investments in technical staff and training, particularly in the area of Microsoft products and technology.

CCW: Which certifications do you cover?

Rose: At present our products are 100 per cent for the Microsoft Certified Professional Program (MCP). As our world expand, our focus is to expand toward the Microsoft Certified Systems Engineer (MCSE) side, however, we continue to offer the fullest selection of Microsoft Certified Solution Developer (MCSD) products available.

CCW: How does the MCSD track compare related to the MCSE and again which options are the most popular? How about MCP versus MCSIT?

Rose: Obviously there are more MCPs than there being the other credentials due to the one-test requirement for MCP status. The

Publication: Transcender Corp.

Web site:
<http://www.transcender.com>

Cost:
US\$85 to US\$149,
depending upon options.

Description:
The exam preparation
software provides
a realistic simulation of
Microsoft certification
exams.

Rating: **A+**



MCSM has been the more popular than the MCSM Systems engineers are more comfortable and familiar with certification and its advantages. Also, developers as a group seem a little less willing to acknowledge the need for certification and validation of their knowledge and skill sets. We think this will change over time as developers become more dependent on object-oriented development tools and component development models generally.

CCW: Which are the most popular certification options today?

Rosen: Not surprisingly, in this age of the World Wide Web, all things related to the Internet are hot. We see strong interest in TCP/IP and IIS.

CCW: What certification options should computing professionals be targeting for in the future?

Rosen: We believe that use of Windows NT will continue to expand in the enterprise. I think certified professionals will want to acquire certifications in such areas as it appears. Having the fluency and knowledge to work with and between various will be highly rewarded. The new MCSM + Internet certification will also be an important distinguishing credential. Messaging and Groupware solutions like Exchange are critical to the modern workplace. We also still believe that the developer certifications will eventually take hold if they are supported and maintained by Microsoft.

CCW: What advice would you give to businesses as to the future of certification?

Rosen: We believe certification can be a very valuable screening tool as well as a good indicator of an employee's willingness to

stay current with the technologies. Certifications should not be considered a substitute for hands-on experience and basic education and problem solving skills. Most professions require ongoing education and validation. There is no reason to expect that IT professionals should be immune. As to the choice of certifications, this depends on the technologies being implemented. Obviously, we remain convinced that Windows NT is the brightest star going forward.

CCW: Where do you see the future of industry certification as compared to traditional education?

Rosen: I do not think that industry certification is a substitute for a good general education. Communication and problem solving skills are still critical in our fast-paced world where most of us will experience jobs in multiple industries over our working lives. I would view industry certification more like passing the bar exam or obtaining your CPA. I think industry certification is most worthwhile when used to indicate your product-specific knowledge and distinguish yourself from those who lack specific product knowledge and experience.

CCW: What is the target market for your products?

Rosen: Our company historically has served the individual computer professional. But these professionals work for corporations, schools, for example. They tell colleagues and managers about our products, so that our success in the institutional and business-to-business markets has been "grass roots." We don't have a history of high pressure sales, so we have very positive relationships with our corporate and institutional customers.

CCW: Where do you see the computing industry going?

Rosen: Improvements in the sharing of information, as well as the indexing of that information on the Internet, will continue to be important growth areas. Technologies that make it easier to locate, compile and analyze information will experience significant growth. Every function of business computing will take on the ability of communicating over open networks. The Internet will be interwoven with almost every business's autonomous applications — both business-to-business and business-to customer. Therefore, security technology will receive a high level of attention. Development technologies will become more visual and decentralized, with more and more business users developing custom applications. Through all this, the demand for qualified IT professionals will continue to grow rapidly for years to come. ■

Stephen Rosen, J.S.P., is a lecturer, writer, adviser and co-convener for the BADM Computing Program at Capilano College, which has won a number of international, national and provincial awards. He is a Microsoft MVP and Microsoft AASP-certified and can be reached at rosenah@capilano.bc.ca.

A typical Microsoft scenario certification questions:

You are responsible for installing Windows NT Workstation on 10 desktop computers at three U.S. field offices and 10 desktop computers at three U.S. and 100 laptop computers. Your company's network consists of a single domain, CAC.

Required results:

You must automate the installation of Windows NT Workstation on the 100 computers.

Optional desired results:

You want to automate the installation of applications.

You want to configure all computers to join the CAC domain during Windows NT Workstation installation.

Proposed solution:

- Create UNATTEND, UNATTEND, UNATTEND, one for each hardware platform.
- Add the *WinNTPreinstall-File to the Unattended section.*
- Add the file *JoinDomain-NT to the Unattended section.*
- Create a USB with a section for each computer that specifies the user name and computer name.
- Install Windows NT Workstation on a reference computer.
- Run Sysprep. See *How to make a snapshot of the reference computer, install the application on the reference computer, then use Sysprep. See* *How to create the reference file.*
- Add the command *Sysprep /s* to apply to the *WINNT/Command* file.
- Start installation of Windows NT Workstation on the computers by supplying the appropriate answer file and the USB with their solutions. *What is the best answer?*

Which results does the proposed solution produce?

- Produces the required result, left optional result.
- Produces the required result, one optional result.
- Produces the required result, no optional results.
- Produces no required result.

(a) is the best answer!

China gets free e-mail

Chinabyte, a Chinese-language technology news service, has launched a free e-mail service in partnership with e-mail developer Comtech.

The Beijing-based company, which was set up as a joint venture between the Great News Corp. and the Chinese Communist Party paper — the *People's Daily*, lets Chinese readers send and receive e-mail free of charge at <http://www.chinabyte.com>.

Comtech president Isobel Maxwell was reportedly very bullish over the deal, saying, "Bringing the free e-mail resolution to one billion Chinese is one of our most exciting challenges to date."

"English may indeed be the premier language of communication on the planet, but it shouldn't be the only option for communicating on the Web."

Fujitsu and Philips partner on PDP development

Fujitsu Ltd. and Philips Consumer Electronics will team up on development and refinement of color plasma display panels (PDPs) for use in next-generation televisions.

The deal calls on the companies to undertake various joint development projects to optimize performance, quality and features, as well as to seek out cost improvements in the design of color PDPs for flat TVs.

"Drawing on the special strengths of each partner and concentrating on the 42-inch format, [we] seek to accelerate development cycles with a specific goal of bringing to market a new color PDP by the end of this year," the companies said in a statement.

A spokesperson for Fujitsu said the deal is

intended to cement the relationship between both companies and set the template of technology between the two companies. This in turn will hopefully lead to lower price PDP television sets.

Both companies have been among the first companies to introduce PDP monitors and televisions.

Fujitsu began mass production of PDP monitors in late 1996. In late 1997, it became the first manufacturer to announce a commercial high definition PDP-based monitor. The 42-inch display screen is now on sale.

Recently, Philips, with Sony Corp. and Sharp Corp., announced development of a flat-panel display using P-LCD (Plasma Addressed Liquid Crystal) technology.

Lenovo & Hasegawa form Japanese subsidiary

Lenovo & Hasegawa Speech Products (LHP) has announced plans to strengthen its position in the Japanese market through the formation of a new subsidiary company called LHP Japan Inc.

The announcement follows the recent acquisition by LHP of AllLogic Corp., a Japanese machine translation company specializing in converting Japanese text to English or Chinese in both directions.

With the formation of the new company, the operations of AI Logic are being integrated into the new company's language technology division. The company will have three additional divisions: translation and localization services, core speech technologies and the desktop division.

Fujitsu understood on DRAM base

Fujitsu Ltd. says it has yet to decide on a production base for its next-generation 1GB-bit dynamic random access memory (DRAM) chips, a company spokesperson said.

The Nikon Koki Foundation reported recently that Fujitsu will choose an Oregon plant for production of the new chips.

"There's nothing set at this time. We're not pulling out from Japan or making any decision to go to the U.S. or Europe," said the spokesperson. The company currently produces 64MB bit chips at its Oregon plant and at a factory in Japan. He said sample production of DRAM for DRAM chips is scheduled to begin later this year or in early 1999 with mass production scheduled for 2000 or 2001.

Japanese PC shipments decline

Shipments of personal computers in Japan sank 14 per cent in the second quarter of 1998, according to a survey by the Japan Electronic Industry Development Association (JEIDA).

The industry group reported domestic shipments were 1.58 million units in the period. With the average price of a personal computer also falling, shipments by value rose 24 per cent to US\$2.24 billion. The total value of PC and peripheral shipments was down 21 per cent to US\$3.21 billion.

The JEIDA survey confirms weekly sales reports based on point-of-sale system data. Notebook computer demand is still strong with the wireless being fazed in the desktop market. Notebook computer shipments recorded a seven per cent increase in the second quarter of 1997 and midway 49 per cent of all shipments, a record high.

Mitsuo's Adventures will be distributed in Japan

Toyoko's I. Hoffmann & Associates Inc. (I+H) has granted exclusive distribution rights in Japanese software distributor Shogakukan Company Ltd., for four Mitsuo's Adventures Series CD-ROMs.



The three-year arrangement is I+H's first software licensing agreement in Japan.

The Mitsuo's Adventures Series is meant to combine educational content and entertainment value, for children ages four and older. "We believe this will have strong appeal to Japanese children, both at the school and home markets," said Mitsuo Tsunetsuna, executive director of international publications for Shogakukan, in a statement.

Shogakukan's Web site is at <http://www.shogaku.jp/>. The Mitsuo site is at <http://www.mitsuo.com>.

Acer to merge/normalize into five units

The Acer Group has announced plans to restructure into five main business groups and has appointed Sheng Lin as president and CEO of Acer Inc.

The company says the goal of the restructuring is the transformation of Acer into a customer-centric company, "reorienting services and a strong commitment toward intellectual property."

"We want to enhance Acer's global competitiveness in the PC business, and prepare ourselves for the next millennium, especially as both internal and external business environments are becoming increasingly diverse and complex," said Acer Group

Chairman, and CEO Sheng Lin.

The five new business groups are Acer International Service Group (AIGS), Acer Service Group (ASGS), Acer Semiconductor Group (ASGS), Acer Information Products Group (AIPG) and Acer Peripherals Group (APG).

Acer Inc., along with Acer Europe and Acer America, will become part of the new Acer Information Products Group.

Lin joined Acer in 1993 as a regional sales manager and was most recently president and chief executive officer of the Information Products Group.

Japan has 41 million mobile phone users

The total number of mobile telephone users in Japan passed 41 million during July, according to information from the Ministry of Posts and Telecommunications.

All current growth levels, the total number of mobile users will pass 42 million during August. [E]

NEW PRODUCTS

Norton 2000 Races down Y2K

Symantec Corp. has announced Norton 2000, "a comprehensive corporate Year 2000 solution for desktop PCs and distributed computing environments." The new Symantec product, available in both a corporate server and desktop version, joins a growing legion of Year 2000 (Y2K) tools that are intended to sustain the desktop and filing of Year 2000 problems.

Norton 2000 includes a data scanning capability, application code database and computer BIOS test-and-fix module. Also included is a copy of Symantec LiveUpdate and Norton System Center to allow IT managers to update and install software over a network.

Norton 2000 operates by running a data scanning program to uncover Y2K problems in many common databases and spreadsheets in file formats including multiple versions of dBase/Paradox, Lotus 1-2-3, Quattro Pro, Access, dBase, FoxPro, Paradox and Clipper. The program can automatically color code, reformat, and replace the Y2K errors in a spreadsheet. Norton 2000 can also verify test and to take other hardware and BIOS settings. It creates a floppy boot disk to facilitate running Y2K tests on a safe environment and minimize the risk of destroying important data. Symantec claims a 50 per cent BIOS fix success rate and a 99 per cent success rate. Additional features expected with the September release will allow scanning of other popular software applications.

Norton 2000 is available for Windows 3.1, Windows 95 and Windows NT operating systems. Canadian prices have not been announced at press time. See <http://www.symantec.com>



or moving video images. It can also be used as a copier with the availability of a printer, and a 6 x 9 inch flatbed scanner. The ImageStudio VF features a reduced bed-size scanner element, which enables the scanner to be made much more compact and feature 12-bit color depth from input other than the flatbed scanner. The ImageStudio VF has dual plug-in interface options for both parallel and USB ports.

Estimated street price is \$299 with US\$360 retail in retail.

The StormScan Express is a 1,280 by 960 dpi, 36 inch flatbed scanner. Amongst the features is the Storm Bit-mix compression technology which greatly speeds up image transmission from the scanner to the host PC. A viewed software suite includes Xerox Page Six, TextBridge (OCR), ImageLab, Adobe PhotoScan 1.0, Storm ImagePro 2.0, and Photo Bridge Suite-Internet Edition, My Website photo album, and an animated greeting card program. Estimated street price is \$550.

Contact: <http://www.stormtech.com>

Panasonic launches HiTV TV

Panasonic has announced the 32 inch CP-DSP46 HiTV television/monitor.

The new HiTelevision can display High Definition and Digital HiTelevision (HDTV) signals as well as an array of traditional composite, component and S-Video feeds. Maximum vertical resolution is 100 lines. As well, the new product has superior audio features, including the Professional Four Channel Sound System, Surround 3D Surround Sound, the new industries, and a built-in 15 watt subwoofer.

The monitor also has a picture channel select knob to allow the operator to follow-up on the central channel speaker is a Dolby Pro Logic or Dolby Digital surround system. The CP-DSP46's host of features can be controlled by a large clear on-screen graphical user interface and a handheld remote control.

More Mitsubishi, for less

Mitsubishi has introduced entry entry-level Diamond Scan monitor models with a quality offer cost-effective yet high quality CRT monitor options for mainstream business and SOHO computer users.

The Diamond Scan 1640, is a 16 inch (333 x 266 mm) 24-pin dot pitch monitor with maximum 1,280 by 1,024 resolution at 60Hz for a suggested price of \$200. The Diamond Scan 90 has a maximum 1,280 by 1,024 resolution at 60Hz for a suggested price of \$200. Two new 10 inch (160 mm) diagonal models, the Diamond Scan 70 and Diamond Scan 60M offer up to 1,280 by 1,024 at 60Hz. The Diamond Scan 70M includes a headlighter jack and two three volt front mounted speakers. The Diamond Scan 70 and 70M have suggested prices of \$149 and \$169 respectively.

According to Glen Axon, general manager for Mitsubishi Electric Sales Information technology group, "As business becomes more and more computerized, we are putting our ourselves to meet this challenge. Computer users want to combine quality and affordability."

See <http://www.mitsubishi-display.com>

According to Ted Tokunaga, marketing manager for Panasonic Canada Inc., "This television uniquely combines the best auditory picture quality and audio features that characterize the GA600 SuperFlat system, along with the capability to display the new HDTV signals. The CP-DSP46 provides an optimal solution for consumers who want to experience great home theatre pictures and sound right now, while making sure they'll be able to enjoy the upcoming digital television broadcasts."

The CP-DSP46 has a suggested retail price of \$2000 US. See <http://www.panasonic.ca>



Storm Technology launches scanners

Storm Technology Inc. and Storm Canadian distribute, Marketing Technologies Inc. have released two new consumer scanner products in Canada.

The ImageStudio VF is a flatbed color scanner with 36 bit color processing, 600 by 480 dpi resolution, and an innovative video digitizing option. The ImageStudio VF hardware is supported by ScanLink software and Microsoft Windows 3.0 software. With the addition of a video camera, the ImageStudio VF can be used for capturing still

Scrypta rolls out new Pentium II notebooks

Scrypta Technologies Inc. has announced two Pentium II-based notebooks - the Scrypta Pentium Scavio 3500 and Scavio 3300.

Each model features a Pentium II 266MHz processor with up to 16MB RAM, up to an 8GB hard drive, a 24X CD-ROM drive, and 16-bit stereo soundcard. The Scavio 3500 includes a 13.3 inch TFT screen and the Scavio 3300 has a 14.1 inch display. Both models can display up to 1,280 by 1,024 and 24-bit resolution. The notebooks are distributed by Legit and Sonnetech. The 3500 starts at \$4,299. See <http://www.scrypta.com>.

IPC has turn-key network

On Aug. 15, IFS Intelligent Personal Computers, a brand of 3D Microcomputers, unveiled a complete small business network solution called the IPC Small Business Server, for less than \$5,000.

The IPC Small Business Server system is made up of a PC server unit based on a Pentium II 300MHz processor, running Microsoft SmallBusiness Small Business Server software. The package includes two PC workstations, a net work hub, and all necessary cabling.

According to David Khalifa, national marketing manager for 3D Microcomputers, which manufactures and sells the IPC line, "our IPC Small Business Server will help small businesses communicate better, improve customer service, protect their company image on the Internet, and simplify tasks."

The IPC Small Business Server is designed for companies with up to 25 PCs, to allow them to share "files, databases, printers, electronic mail, fax services, and other resources with anyone, anywhere, anytime," according to IPC. The package comes with a 30-day money back guarantee, plus a three-year parts and labor warranty. For more information, contact <http://www.ifs-ipc.ca>.

Toshiba stresses configurability

Toshiba of Canada, Information Systems Group, has rolled out a full line of new notebook computer models, including the Tegra 8000 series, which Toshiba representatives claim is "the world's most configurable notebook."

In addition to the new Tegra, Toshiba also unveiled new Portege, Satellite and Latitude portable computer models. The Tegra 8000 series is intended for the high-end corporate market. It is designed to allow for the easy substitution of new CPUs, drives and other parts over the next 18 months.

According to Robert Grossman, vice-president and general manager of Toshiba of Canada Information Systems Group, Toshiba has committed to offering a notebook series users can be confident will not become obsolete in a few months. The Tegra 8000 series has a starting price of \$4,000.

The Toshiba 7000CT is Toshiba's first foray into the hot new niche of the lightweight, lightweight class, portable business notebook designed as a

price of \$2,750, the Portege 7000CT is one inch thick and weighs four pounds. It comes standard with a 266MHz Pentium II processor, a built-in 56Kbps modem, a 4 GB hard drive, and MFUS-2 video decompressor.

The Satellite 4000CG3/4000CT models are based on either 200MHz or 266MHz Pentium II processors, beginning at \$3,100.

According to Toshiba, the Satellite notebooks are ideal for students, mainstream business people and first-time notebook users. See <http://www.toshiba.ca>.



CA, Source Recovery sign Y2K code agreement

Computer Associates International Inc. has signed a special agreement with The Source Recovery Company (SRC), a firm which specializes in recovering source code for suits where applications that used to be made from Y2K code.

In some cases, according to Mark Sandler, vice president of CA's Year 2000 business unit, "Source code for legacy applications is impossible to locate. Partnering with The Source Recovery Company enables us to help clients recover missing code so that their applications can be updated and completely fixed for Year 2000 compliance, providing huge time, resource and cost savings."

SRC uses proprietary software tools which recover COBOL and Assembly code from software object modules for IBM, MVS, MVS or VM-based programs, allowing the reconstructed code to be recompiled automatically by the CA-Pix/2000, a part of the CA Discovery 2000 solution.

According to Barry Chapp, president of SRC, "Our complementary solutions provide CA clients with the fastest, most efficient solution available for remediation applications in which source code is missing."

See <http://www.ca.com> or <http://www.source-recovery.com>.

Kodak promotes USB cameras

Kodak Canada Inc. steps up new offerings for digital cameras to computers of less than 16 megabyte (less than traditional digital cameras). The Kodak Digital Science DC200 and DC260 zoom cameras use the USB interface, which is faster than serial or VGA for image transfer, says Kodak.

Each camera has a maximum sitting at 16 megabyte. Pricing starts at \$1,145 for the DC200. Special features on the DC260, which starts at \$1,395, include a 6X optical zoom, an enhanced (hard) copy rate and the opportunity to connect an external flash. See <http://www.kodak.ca>.

Windows 98 includes Macromedia players

Top of the most popular Internet multimedia player users — Macromedia's Flash and Shockwave are pre-installed in the new Microsoft Windows 98 operating system.

Increasingly Web sites with "interactive" multimedia content including stereo music, animations and digital video, use the Flash or Shockwave formats for this rich content.

According to David Mendel, general manager of Macromedia's graphics, Internet and multimedia unit, "Macromedia and Microsoft are improving the on-line experience for millions of Windows 98 users."

Developers can create more compelling, effective Web sites that bring viewers back again and again and consumers get a more exciting Web experience without having to worry about downloading and installing technology.

For Windows users not running Windows 98, the Flash and Shockwave players are available for download from the Macromedia Web site (<http://www.macromedia.com>).

Macromedia recently opened a Canadian head office in Montreal. See <http://www.macromedia.ca>.



Ted Rehn leaves NEC

Ted Rehn, executive vice-president of Packard Bell NEC Canada's NEC Computer Systems Division, has resigned from the company "for personal reasons, effective immediately."

Gregory D. Milne, director of strategic accounts, is acting vice-president of sales and marketing for the NEC Computer Systems Division in Canada.

Simmons adds CEO

Draws external company, Simmons Inc., says Glen Browne, Simmons's previous president and chief operating officer, is now CEO for the company.

Browne first joined the company in 1994 as senior vice president of marketing and operations. William Green will continue as Simmons chairman.

Don Listwin is new VP at Cisco

Cisco Systems Inc. board of directors has promoted Canadian Don Listwin to executive vice-president.

In his new role, Listwin will help introduce Cisco's new consumer line of business and continue to lead Cisco's service provider line of business, in addition to directing all of Cisco's corporate marketing. The service provider team will provide solutions for Internet service providers, telcos, cable and wireless companies.

Listwin has held a variety of marketing and business unit roles since joining Cisco in 1990. He was recently vice president and general manager of the Access Business Unit (ABU), which doubled its revenues under his leadership, and the company



Don Listwin

Calendar

Sept. 1-3

Webcast World

Boston

<http://www.its.com/broadcast/>

Sept. 9-10

Support Services Conference & Expo

San Francisco

<http://www.candor.com>

Sept. 16 — Calgary

Sept. 22 — Vancouver

Oct. 6 — Halifax

Oct. 14 — Montreal

Marketing '98

<http://www.marketing.com>

Sept. 23-25

BC's Sales Force Automation Conference & Exposition

Toronto

<http://www.its.com/broadcast/>

Oct. 5-8

CRM Annual Trade Show and Documentation Conference

Toronto

Call (800) 338-6030

<http://www.infotrack.com>

<http://www.crima.ca>

Oct. 6-8

Canada/Spelec

Montreal

<http://www.compta.com>

Nov. 9-10

The CIO Summit

Ottawa

Call (613) 233-3550

Nov. 18-20

Canada/Fall

Las Vegas

<http://www.candor.com>

Simple Technology hires VR marketing director

Mississauga, Ont.-based Simple Technology Inc., a value-added distributor of computer components, has appointed Kevin Jermis as vice president of sales.

Jermis's most recent positions in the computer industry include North American sales manager at British Communications Inc. and national sales manager at EMJ Data Systems Ltd.

The company has also named David Peo as director of marketing.

That responsibility includes vendor marketing, management, program/promotion creation and execution and advertising.

Peo's previous positions include channel marketing manager at Celestion Inc. and product manager at Microlink Canada.



APNIC has new director general

APNIC, the Asia Pacific Network Information Center, has appointed a new director general.

The organization, which issues IP addresses to users in the Asia Pacific region, has appointed Australian Paul Wilson to the post. He replaces David Gavett, who resigned in February.

In addition to his job at APNIC, Wilson will also become chair of the Asia Pacific Networking Group (APNG), an APNIC-backed project, too.

Do you have an upcoming event you'd like to be listed in CCM's Calendar? E-mail swelling@comptia.com

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Lab: Local Printing

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Distribution: Nov. 4
Features: Channel Upsets
Hardware Focus: Input Devices
Software Focus: Small-Business Software
Lab: Hard Drives

DECEMBER

Ad Deadline: Nov. 12
Distribution: Dec. 2
Features: Forecast 1991
Hardware Focus: Digital Cameras
Software Focus: Educational
Lab: Affordable Software



NiftyNumbers

Report from Brookman

Where is the Payback? *Services, Software?*

by Margery Leach

The Canadian IT services sector gave it a higher rate than the software sector between 1996 and 1997, according to a recent analysis of Brookman200 data. The average growth in revenues for the top 10 IT professional services companies between 1996 and 1997 was more than 26 per cent, while their counterparts in the software sector increased their revenues by an average of just over 17 per cent during the same period.

From a market perspective, organizations are increasingly looking to outsourcing as a means of managing their computing environment, partly because of the growing difficulty in recruiting qualified IT professionals in this competitive industry. In addition, technology innovations continue to increase complexity, forcing more companies to seek external assistance in order to help them solve potential challenges into opportunities. Some of these technology-related market forces include Internet and internet applications, e-commerce, Java, Year 2000, network computing and distributed computing.

The main industry factors driving growth are industry consolidation and partnering. Many IT services organizations are seeking mergers and acquisitions to increase their market presence. Thus, in some cases a reported revenue increase could simply reflect the merging of two or more companies. Brookman's picks of players to note for their



staying power, advancement strategies, and/or rapid growth include Eoscan, CGI, LGS, Deloitte, Touch, Procom and Geotrix.

Despite slower growth, the software sector continues to generate higher revenues and higher returns per employee than the IT services industry. While the top software company (CGI) generated more than \$370 million, the top professional services company (CGI) generated just over \$20 million in 1997. The higher ranking software companies typically generate over \$200,000 per employee, while a large proportion of the top services companies generate less than \$100,000 per employee.

It is likely that, as the IT industry continues to evolve, we will see the line between these two sectors beginning to blur. It will be the companies able to add real, customer-focused value to technology that will continue to thrive. ■

Margery Leach is a director at Brookman Group Inc., an Ottawa Brookman is a leading international "Go to Market" consulting firm with a proven formula for helping organizations in the information technology (IT) industry achieve market success. Call: (613) 743-1282, ext 18 or fax: (613) 743-6990.

Reader Poll

This issue:

The Canadian dollar has been hitting record lows, spurred on by the currency crisis in Asia. While Asian goods may be accessible due to their rising currencies, buying from the US has become more expensive.

Our Question to You:

In your opinion how is the currency situation affecting the Canadian computer industry? Which most closely reflects YOUR view?

- ☐ Overall, the currency issues are contributing to costs rising for products and components.
- ☐ Overall, the currency issues are contributing to costs coming down on products and components.
- ☐ On balance, the currency issues are currently having little effect on the Canadian computer industry.
- ☐ There is untapped opportunity for export, with the low Canadian dollar.

Last issue, we asked:

With high-quality printers and digital cameras on the market, business and consumers can easily manage the whole photo process with relative ease, resulting in quality images. But are the technology and the price point really hitting that sweet spot yet?

You said:

- 3%** Consumers are now flocking to purchase digital cameras.
- 23%** Vertical business applications and certain photo enthusiasts are still the most interested shoppers for digital cameras.
- 13%** Digital photography technology isn't yet mature enough for many customers.
- 61%** Prices on digital cameras are still too high for many customers.

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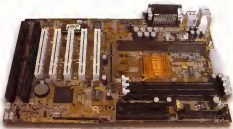
Congratulations to the winner of Synetech's A&T All-in-one manager software: Victor Gaspard, at Micrologix Inc. in Calgary.





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Touch Scanning™ easy to use interface)



Complete line of high performance,
high resolution CRT monitors
(DST4 shown: 19" display 95° viewable 1600 x
1200 resolution, 175 MHz bandwidth, 30min.
horizontal dot pitch, five year warranty, APRC™)

